

# COMMERCIAL CAR JOURNAL

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JUNE, 1936

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# Now..Your Truck Engines

An entirely new kind of oil gives  
more miles...more effective lubrication...

**H**ERE'S new economy for Truck  
Fleet Operators.

This new oil—made by an entirely different refining process—has changed, overnight, the usual conception of what a *good* motor oil should be.

This new treatment—the Furfural Process—frees the New Texaco Motor Oil, *entirely*, from all tar and gum forming elements...frees it from other non-lubricating materials, too. It is all lubricant...no waste.

You get a stronger, more protective oil film...a film that has greater resistance to heat inside the engine. We call this the "Furfural'd Film."

Your mileage records will show

that this oil lasts longer. Here is lower oil cost.

But, more important, this "Furfural'd Film" so completely lubricates and protects that it will reduce cylinder and bearing wear, keep rings free, give maximum compression, and prevent gasoline waste.

You will get longer periods between overhauls and maintenance costs will be reduced.

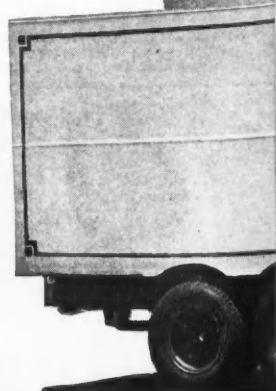
A Texaco representative will be glad to provide practical engineering service to prove the economies you can get with the New Texaco Motor Oil.

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**NEW**



**TEXACO  
MOTOR OIL**







Goodyear lug tires enabled this Helms and Boettcher milk truck to operate over Wisconsin's snow-blocked roads without chains—and without stalling. When this picture was taken, the thermometer registered 10 below but ye editor has only just succeeded in thawing it out

# The OverLOAD

## 10,000 Questionnaires . . .

**B**ACK of that article on Expander Type Piston Rings on page 12 is the story of 10,000 questionnaires, no more, no less. Ordinarily we'd hate to admit that 10,000 questionnaires pulled only 100 or so replies. Direct mail experts would shake their heads, tsk-tsk disappointedly, and tell you that the return should have been at least two per cent. Of course, even that wouldn't have satisfied us because we've had too many 10 and even 20 per cent returns on such practical questionnaires. So naturally, the one per cent return has set us to wondering, to thinking and to planning.

## . . . Set Us to Wondering . . .

**W**E first began to wonder back in March when returns to the first batch of 5000 questionnaires started dribbling in. The awful 1 per cent stared us in the face. Something's wrong, we said, and proceeded to prove it by sending 5000 more out in May. Well, something's wrong but we didn't prove it. So that set us to thinking. What can be the reason for such a poor showing? we asked ourselves. For one thing the piston ring manufacturers have not made a real attempt to sell the fleet market on expander rings. Jobber salesmen have doubtless been active but the manufacturers have not paved the way for them by means of advertising. (We think the manufacturers have overlooked a bet, but that's another mat-

ter.) Therefore, we soothed ourselves, the unfamiliarity of fleets with expander rings might be the reason for the lack of returns.

## . . . To Thinking and . . .

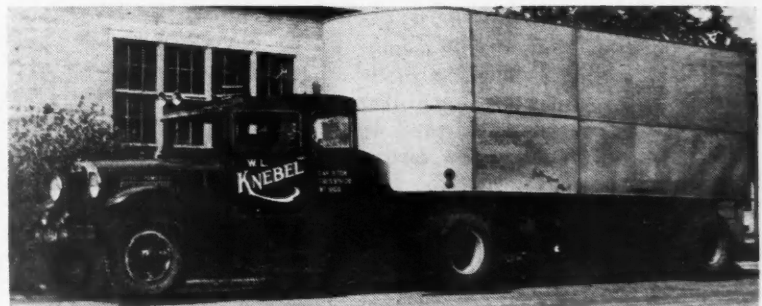
**B**UT we didn't stop at that reason. We went over the questionnaire again and again, studying it for "bugs." We thought we detected one and made some personal visits to the smaller fleets. It looks to us as if it were another reason for the low returns. One of the questions asked was: "At what cylinder taper do you install expander type rings?" Now it may not be true in your case, but years of contact with fleet shops convinced us long ago that there are too many shopmen who couldn't read a micrometer if their lives depended on it. Apparently there has been no improvement on that score, and that, plus the reluctance of most individuals to reveal their ignorance, however excusable, may have made the cylinder taper a stumbling block—with the 1 per cent effect.

## . . . To Planning

**S**o that has set us to planning. The article on page 12 tells you all that we have found out about the use of expander rings in fleets. Its practical slant should prove of value to every fleet. However, we are going to do something about those micrometers. We are going to give you an article on how to read a micrometer. If you can't read one now, the 15 or 20 minutes you spend on the article will enable you to graduate with the degree of Master-Mind on Micrometers. We're pushing it through for the July issue.

## Kicks on Keeshin

**T**HE "Keeping Up with Keeshin" yarn on page 25 deserves some background comment. It probably won't come as a surprise to Mr. Keeshin himself that there are a lot of operators who see red at the mere mention of his name. In the past this antagonism was aroused by his aggressiveness, by some of his ideas and by the utter frankness



This is the diesel powered unit on which W. L. Knebel of Pocahontas, Ill., has banked to save \$2,140.49 on fuel in a year. The Hug model 42-A hauls 20,000 to 24,000 lb. from St. Louis to Boston every 10 days. The original 428 cu. in. engine was replaced with a 415 cu. in. Buda diesel. Fuel cost per trip with gas was \$79.36 and for fuel oil \$18.20. He also got 9 1/2 m.p.g. with the diesel against 5 m.p.g. with gas. We "gas" this is a pretty good saving

## The Overload

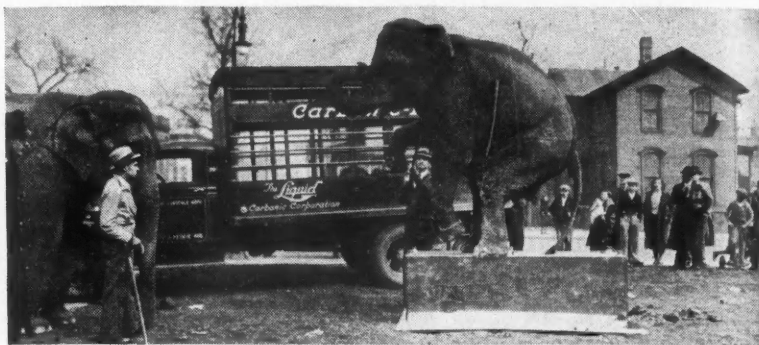
with which he has the habit of expressing them. At the moment this antagonism is being perpetuated and is gaining additional converts because of aggressiveness which is being expressed in terms of expansion by the acquisition of motor freight lines. We were not unaware of this antagonism but recently we have been made doubly conscious of it. It seems that there is some resentment among many of our readers at the manner in which we are chronicling the Keeshin development. They think we are giving too much attention to Keeshin.

### We Kash Out; You Kash in

**O**N our part we can't see why such resentment should exist. If our articles revealed some silly hero-worship or represented mere publicity piffle the resentment would be justified. (Although you'll never have cause to feel that way about any part of our editorial section, so long as we have anything to do with it.) We are keeping an eye on the Keeshin enterprise because it is the outstanding development of the Motor Carrier Act regulating interstate haulage. That eye is costing us money and we're going to keep it peeled so that you may know what is happening on that front—and you should know. If something unsavory should develop, don't think you'll have to look elsewhere for it.

### More Keeshin Koming

**T**HERE'S more Keeshin in the article giving motor freight classifications the third degree. Shippers should know what's good and what's not so good so far as they are concerned, so you needn't expect us to argue with them if they think Keeshin is doing a pretty good job of classifications, and that other agencies are not so hot. And we might as well prepare you now for the motor freight rate yarn in the July issue. Keeshin seems to get a pretty good break there, too. It is our impression that there is a lot that will have to be done on rates if truckers wish to avoid incurring the undying displeasure of shippers. We hope we are contributing in our small way to a realization of the causes of shipper dissatisfaction so that reasonable steps may be taken to eliminate them.



Peggy the ponderous pachyderm proves Plymetl can take it. She and her keeper were both skeptical of this, at first, being mindful of the beast's 2½-ton weight. Now see Peggy performing tricks on the box without fear of crashing. But there's no trick to the Plymetl cooler box. It's waterproofed plywood panel with a metal facing. Its strength, in view of its light weight, fooled Peggy's keeper

### Calling All Costs

**R**EADER reactions reveal there are quite a number of fleet men who would like to get operating cost figures for comparative purposes. Frankly, we have steered clear of publishing such figures for a number of reasons. First, the figures... complete and honest figures... are difficult to procure. The small percentage of operators who keep complete records, guard them jealously for obvious reasons. They have a fear which may not have occurred to you. It is that the cost figures that are published will prompt executives higher up to make comparisons which may not be flattering and may result in drastic action, because those higher-ups never seem to consider that variations in operating conditions are a perfect reason for variations in costs. However, if there are any operators in the audience who are entirely free of inhibitions, who would like to compare their costs with others, we wish they would step forward. We'll be glad to start the figures rolling. Company names need not be revealed. The figures can be just as interesting without them.

### Costs... Free of Cost

**A**LL of which leads us to mention a couple of sizable booklets prepared by the Metropolitan Life Insurance Co. with the help of some of their fleet-operating policyholders. One book is on Operating Cost of Heavy Duty Trucks and the other on Light Trucks. We offered the latter in May, but you now can have both by checking the coupon hereabouts. The cost analyses are comprehensive and, it's a guarantee, very interesting. They cost you nothing. The line forms on the right.

### An AC Safety "Plug"

**T**HE AC Spark Plug Co. has just completed a 12-year record during

which their trucks were operated 1,520,000 miles, mostly city driving, without a single accident. (We know, that as a practical operator, you will let go a skeptical "Oh, yeah? What do they call an accident?") We don't intend to argue the point. We do think, however, that, judging by the safe-driving philosophy of five of their drivers, the company should have a very outstanding safety record. They all express themselves in different ways but the sum of their statements boils down to what Driver Yuch has to say: "I avoid accidents by being alert, keeping within the speed limit, stopping promptly, watching the other driver and anticipating what he is going to do. I drive according to the condition of the streets and am careful all the time." To which might be added Driver Roy Behrendt's choice bit: "If I can avoid an accident by giving the other driver the right-of-way, I let him have it."

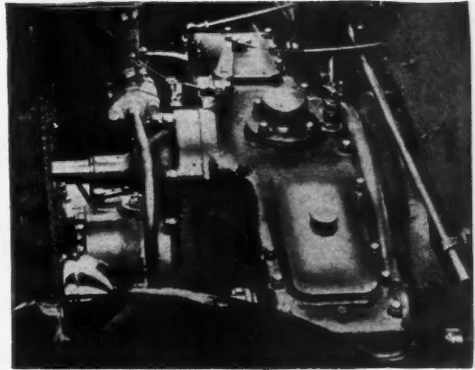
### Free Pack of Packings

**I**N order to acquaint every fleet operator who has his own shop and every recognized repair shop operator with Wilco valve packings the Wilkening Mfg. Co., 70th St. and Church Lane, Phila., Pa., offers free of charge one complete set of Wilco valve packings for any given engine. This sounds like quite a bit of "all right" considering that all the reader has to do is check A on the coupon and specify the engine his gift is to fit.

### Cooling System Cocktail

**T**HE Philadelphia Gas Works mixes its radiator cocktails in a large shaker. The water and anti-freeze are mixed in a large tank located inside the shop in such proportions that the radiators are protected to a safe known temperature. From the tank the solution is pumped to the radiator filling tower in the driveway. No one is then responsible for freeze-ups because there are none.

# **To the GROUND**



This two-cylinder opposed, 15-18 hp. diesel engine for light trucks will be sold by the Covic Diesel Engine Co., Los Angeles, Cal. Covic secured license for its manufacture and sale in this country from the Victor Oil Engines, Ltd., Coventry, England. Its weight is said to be 280 lb. with an engine speed range of 500 to 3500 r.p.m.

## Patents for Parcels

One of our spies did a commendable job this month. He not only tracked down a rumor but he actually saw exhibit A. In addition he got out a pad and pencil and took down details and made his way to this office with his notes intact. His notebook reveals that a very large delivery fleet is actually manufacturing at least one truck which incorporates the features they want in a truck. It is a 112-in. wheelbase truck with a very heavy chassis frame and a substantial X member. Hydraulic brakes are larger than any current design provides for a truck of similar capacity. The axles are oversize, the rear axle having two speeds. Power is supplied by a six-cylinder engine of relatively low horsepower. The body is expected to be extremely light and the driver is to be ensconced upon a swivel seat.

## Laundry Literature

Edward Loscheider, American Institute Laundry, Joliet, Ill., has two small trucks that cover 80 mile routes on certain days and on these days the drivers are able to solicit more laundry than they are able to load on the trucks. Mr. Loscheider has considered two-wheel trailers having a floor space 4 ft. x 7 ft. Mr. Loscheider would appreciate communication with interested manufacturers and fleet operators who could give him some advice.

## Baking Babble

Things are stirring in the paint business, this department learns from its dispatches. For instance, this very month outlets are being opened up for the distribution of a new enamel which can be baked at such a low temperature that it is unnecessary to remove tires, batteries, etc., from the vehicle for the baking process. Still such modest baking requirements give the desired results of sealed surface and high lustre.

## Delivery Definition

Knowing that headquarters never forgets or never passes up a tip, one of our men has given us this simple warning: "Be on the lookout for a new light delivery truck model to list between \$400 and \$500. It

will be a 106-in. wheelbase and will have phenomenal gas mileage as a result of direct fuel injection. A goodly number of experimental cars are averaging 32 m.p.g."

## Alignment Agendum

Fighting for recognition among the items placed before this department for consideration this month is a confidential note stating that a piece of shop equipment will soon be marketed that when mounted on the floor will indicate whether or not the wheels of a truck are out of line when a truck is driven into the shop.

## Piston Performance

Every now and then one of our spies turns in a report on something that causes us to either doubt his sincerity or his ability. When this happens the head spy checks up and invariably is forced to apologize, at least mentally, to the hard-working operative. The most recent report that caused such discomfort concerns a ringless piston. The piston is composed of welded sections and the force of the explosion causes certain sections to move radially against the cylinder wall with the result that piston rings are not necessary.

## Delayed Data

Right up to press time we thought we would be able to give you full details on a new  $\frac{3}{4}$ -1-ton truck by Diamond T Motor Car Co., but the news eluded our most carefully laid plans. However all of the effort was not wasted as our spy managed to garner these facts. Engine, six-cylinder, 190 cu. in.; wheelbase 119 in.; tires 6.00/16 and weight (chassis) 2750 lb; chassis list price, \$525. We should not miss on full details next month.

## Cushion Canto

A new company has taken the truck driver's comfort so seriously that they are starting to manufacture air cushions for seats and sleeper cab mattresses. The container is made of a special rubber lined with a cotton pad for coolness.

## Ignition Interlocution

Finding its way into our dispatches this month is the information that an ignition

maker is almost ready to announce equipment that will provide the hottest spark yet. It will be a 12-volt system with a special coil and a distributor fitted with two condensers. It is designed to provide a hot spark for use in connection with a gasoline to fuel oil convertor or in the Hesselman type engine. A vacuum attachment permits the hottest spark at low speeds to prevent fouling of plugs when idling. If we understand it correctly, it is a replacement item that can be installed by the fleet operator.

## Analyzer Accouterment

Unable to trace down a rumor to a positive conclusion we give you the substance of the rumor without being too sure of our ground. 'Tis said that one manufacturer plans to recognize the fleetman to the extent of producing a portable engine analyzer which can be carried from truck to truck. Current to operate the unit will be supplied by a small motor generator.

## FREE

(Check and mail to the Editor, Commercial Car Journal, Philadelphia, Pa.)

- ☐ A—Wilkens's free sample set of Valve Packing (specify engine)
- ☐ B—Victor Gasket Guide
- ☐ C—Booklet of information on Eaton two-speed axles
- ☐ D—Complete Catalog on DeVilbiss air compressors
- ☐ E—Goodrich Tire Calculator
- ☐ F—Technical data and catalog of Ohio gears
- ☐ G—Booklets on operating costs of light and heavy duty trucks
- ☐ H—Cornell catalog of rolling grilles and doors

Name .....

Title .....

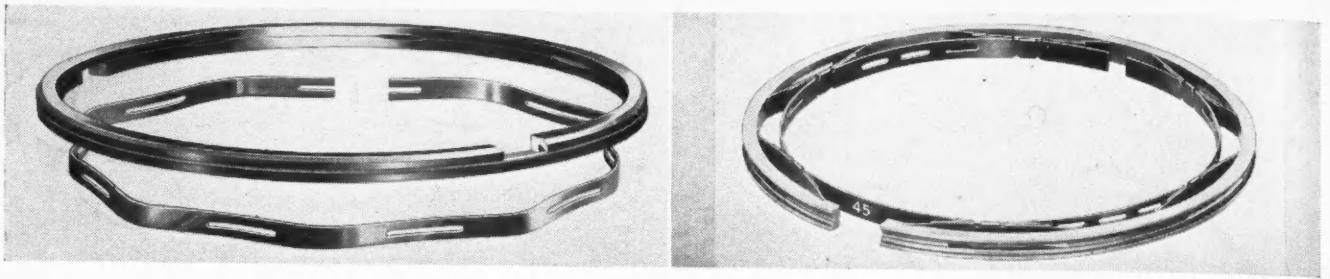
Firm Name .....

Address .....

City .....

No. Trucks Operated .... No. Cars .....





Illustrations are of various types of oil control rings. Reading across from L to R: Pedrick hydraulic; Perfect Circle's new X90; Ramco's spring type; Simplex's Moliun ring

**N**INETY-SEVEN fleet operators reporting upon the operation of 7582 trucks and 1947 passenger cars establish the fact that expander type piston rings have a definite place in fleet maintenance programs. The 9529 fleet-operated vehicles involved in this survey consume piston rings, both conventional and expander type, at the rate of 5.3 piston rings per vehicle, per year which is about five times the rate of consumption of the average owner-operated passenger car.

The rate of consumption, which establishes the fleet operator as a quantity buyer of piston rings, was obtained by dividing the number of piston rings bought by these fleets during the period of one year by the number of trucks which they operate. Some questionnaires had to be discarded in obtaining these totals as they did not contain enough information of a concrete nature to permit their use for this purpose but these questionnaires were extremely useful for other phases of this survey since they contained some very pertinent information on the use of expander rings.

**A**N even 60 fleet operators buy and use expander type piston rings in maintaining their fleets and 37 do not. From the comments it is possible to see that expander type rings are not as popular on large-size heavy-duty engines as they are for use in the lighter equipment, although it is obvious that some operators are successful in using expander type rings on the heavy equipment. Scattered here and there throughout the questionnaires are warnings that the technique of installation has much to do with the success of the expander type ring. It may be possible that a little closer study on the installation of the particular type of ring that appears to be the best to the individual operator would result in an even greater popularity.

It is noteworthy that those who are among the 37 non-users who comment

## What Can Fleets Expect of *Expander* **TYPE PISTON RINGS?**

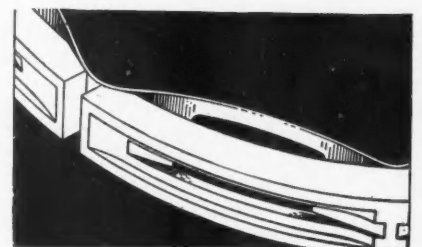
**Longer Life With Adequate Oil Control In New Or Reconditioned Cylinders and Much Longer Life In Worn Cylinders is the Nearly Unanimous Answer from 97 Fleets Operating 9529 Trucks and Passenger Cars**

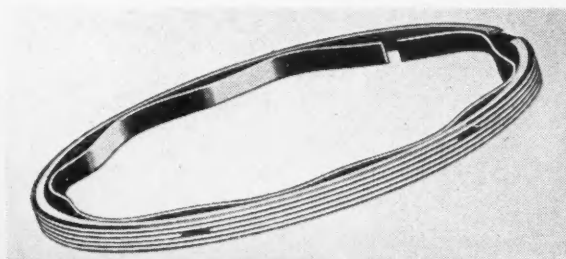
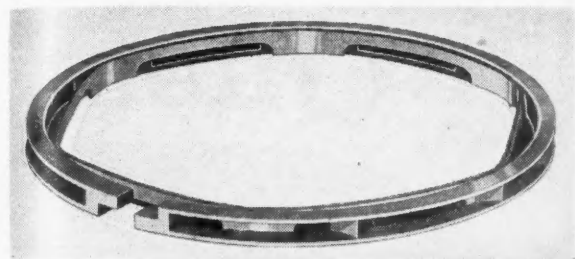
on expander type rings do not condemn the expander ring in a positive manner nor do they offer any evidence that they will not use expander type rings in the future. Some state that their experience has not been satisfactory and others that expander type rings are not economical in their opinion. In view of the highly successful results obtained by other fleets it seems probable that some of these opinions would change and some of the unsatisfactory experiences could be corrected with a combination of the right ring and more knowledge of installation.

The installation part of an expander ring job cannot be too highly emphasized. Several jobbers' salesmen who sell expander type rings have told us that some of their customers are uniformly successful in obtaining satisfactory jobs with expander type rings while a few shops are uniformly unsuccessful in getting satisfactory results. Since all of the shops in question are installing the same type of rings in the

same general run of cars the difference in success and failure must be in the installation methods.

**T**WENTY fleet operators or about one-fifth of all the fleet operators contributing information use only expander type rings. They install them in both worn and reconditioned cylinders. Seventy-six fleet operators do not install expander type rings in new or reconditioned cylinders. Since 60 fleet operators use expander type rings and only 20 operators install expander type rings in new or reconditioned cylinders it follows that 40 operators use conventional



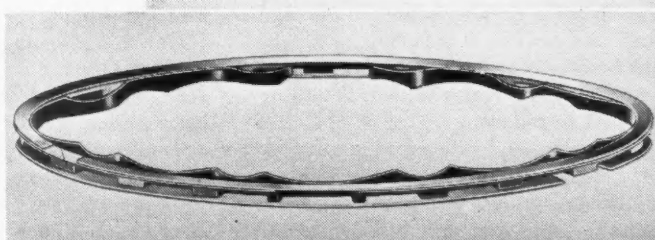
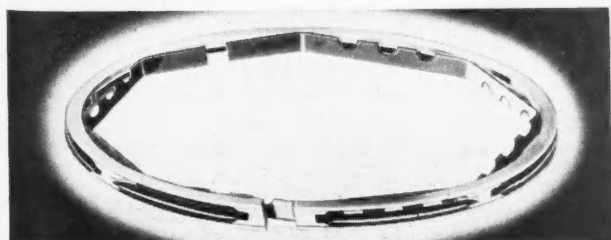
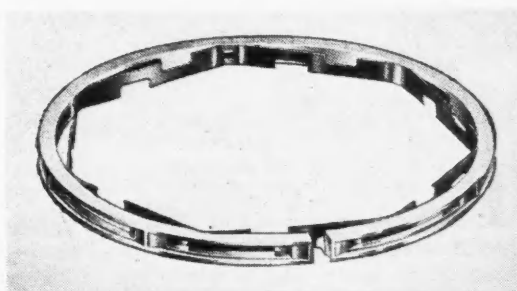


rings in new or reconditioned cylinders and expander rings in worn cylinders.

Adequate oil control can be maintained with expander rings in new or reconditioned cylinders for 32,400 miles according to an average figure taken from the mileages given by 15 operators who have records covering this phase of piston ring work. The lowest figure given was 9000 miles and the highest

(TURN TO PAGE 46, PLEASE)

Right—McQuay-Norris' Super-oyle ring; Below right—Hastings' steel-vent oil control ring; Left—Burd expander type; Far left—Sealed Power's Statite. Compression and scraper rings are also made in expander types





Above—Safest drivers in Decatur's war on accidents are (L. to R.) Fritz Rosanski, Al Lindstrom, Nate Dearborn, Jerry Dix. Seated: Erven Denton and Ray Heminover. They completed three years, 600,000 miles without an accident. Side and rear trailer views show what is being done with equipment in the safety war

**T**HE smart truck operator looks at the safety record of his fleet from the economic as well as the humanitarian standpoint. Useless waste of life and limb and useless destruction of trucks are economic wastes which every owner and driver of a motor vehicle should do his part to reduce.

What Decatur Cartage Co. of Chicago did in promoting safety can be equalled by any fleet, provided, of course, that the desire to promote

safety is sincere, and it should be, if for no other than the selfish reason of eliminating costly accidents to one's own equipment.

Our first step in the direction of organized safety promotion was taken in June, 1933. New features have since been added to our program steadily and we are constantly striving to improve our methods of driver training and studying ways to make our equipment safer. That our efforts proved

profitable is shown by the fact that our 1935 accident frequency was 40 per cent less than our 1933 frequency and 10 per cent less than the 1934 frequency. The loss ratio has kept pace with frequency reduction. Our fleet has doubled in size since 1933 giving us a high percentage of new men, most of them with little previous experience. Seventy-five per cent of our equipment are tractor trailer units in long distance work. Our chargeable frequency for



# of Safety—Try a Quiz

## Mid-West Fleet's Driver Questionnaire Sheds Light on Individual Accident Causes and Indicates What Should Be Emphasized in Safety Education; Cuts Accidents 40% in Two Years

the last six months of 1935 was 1.73 accidents per 100,000 miles. Statistics are kept on the basis of total accidents. Our total mileage for 1935 was about 5,000,000 miles. Based on completed years only, our men drove approximately 5,000,000 accident-free miles between January 1, 1933, and December 31, 1935.

WHAT we have accomplished has been done through diligent, hard work, not by some magic formula. Our study of accident contributing factors and safety-mindedness of our drivers was facilitated by a quiz.

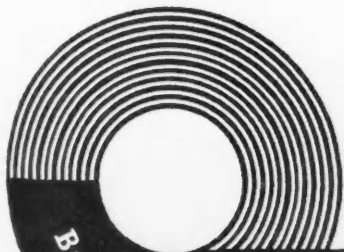
We gave every driver in our employ a questionnaire in which we asked about 50 questions relating to proper driving. A study of the answers clearly shows that our educational program has been productive of good results. Eighty-five per cent of the men made passing grades. Considerable interest was evidenced, aided by three cash prizes for the three best sets of answers. Some light was thrown on individual accident records. Education is attempted on the questions most often missed. Some accident causes

(TURN TO PAGE 107. PLEASE)

## How Would Your Drivers Answer These Questions?

1. How can backing accidents be avoided?
2. Name three places where it is unsafe to back up.
3. Who is responsible for backing accidents?
4. How can right hand turn accidents be avoided?
5. Which has the right of way, a vehicle going straight through an intersection or one making a left turn? (Vehicles meeting) Why?
6. Does a left turn ever have the right of way?
7. How far from intersection and from what position in roadway should a left turn be started? Right Turn?
8. How do you indicate to other persons your intention of turning left? Turning right?
9. Vehicle approaching intersection on your left, does it have right of way if it reaches intersection first?
10. Of what benefit to you is legal right of way?
11. Vehicle coming fast into intersection on your left, you reach intersection first, does other vehicle have right of way? Why?
12. What is your method of driving through an intersection?
13. Do you overtake and pass other vehicles in intersections?
14. When do you have right of way in crossing a boulevard?
15. When does a pedestrian have right of way?
16. If you are approaching street from alley or driveway, who has right of way?
17. When is it OK to pass a standing street car? Can you pass on left of street car?
18. Name five places where it is dangerous to pass another vehicle going in the same direction.
19. What is speeding?
20. Do most accidents occur in cities or on the highway?
21. Do most accidents occur in daylight or dark?
22. Do most accidents occur in good weather or bad?
23. Which movement of vehicle prevails in most accidents; turning, backing, or going straight?
24. What parts of your vehicle should be checked before going on the run with it?
25. What proportion of accidents are caused by the drivers?
26. Do you drive downhill faster than on the level? Do you coast out of gear?
27. How can you insure control of your vehicle on a steep down grade?
28. How do you determine when weather and road conditions make it advisable to stop?
29. If your motor were governed at 35 m.p.h., how much clear highway would be required to safely overtake and pass another vehicle going in the same direction and maintaining a speed of 20 m.p.h. assuming load, weather, light and pavement conditions to be favorable?
30. With reference to braking, what is reaction time?
31. With adequate brakes, good tires and dry pavement, what is safe stopping distance in feet, from following speeds? 15 m.p.h.? 20 m.p.h.? 25 m.p.h.? 30 m.p.h.? 35 m.p.h.?
32. What importance do you attach to keeping all lights burning on a vehicle at night?
33. What lights are required after dark on a parked vehicle?
34. What advice should you give a sleepy driver?
35. What is the proper way to park a vehicle to insure it's remaining in place?
36. Would courteous actions in driving have any effect on accident causes?
37. If a vehicle is overtaking you from the rear and the situation in front might be productive of an accident, what should you do?
38. If the other party in an accident were wrong in his actions and you had done all the law required you to do, yet you might have avoided the accident by giving up all your rights, would you be willing to share the blame for the accident?
39. What are you supposed to do in case of injury to other persons in an accident involving your vehicle?
40. What information should you secure in all cases of accident involving your vehicle?
41. Who adjusts all accident claims?
42. Are all accidents reportable?
43. What are some of the standard safety appliances used on motor trucks?
44. In case of an enforced stop on the highway or alongside it at night what do you do to warn other traffic? In daytime?
45. How can accidents be prevented?
46. What is reckless driving?
47. What causes accident increases when pavements are slippery?
48. When can you use the left side of the road?
49. How do you drive in a curve?
50. Have you a suggestion for safe driving?

(If you would like to have the right answers, write the editor and he'll see that you get them.)



BY R. M. PRIDE, Safety Director, Decatur Cartage Company, Chicago.



## SHOP MECHANICS ARE

*Faithful Hands*

At Keeping Records  
If They Are Simple

**Truck Record Book, Service Record, Job Sheet,  
Battery Record and Tool Tab Are Forms That Pro-  
mote Shop Efficiency If They Are Easy to Keep**

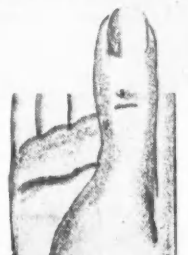
**T**O successfully handle fleet shop service: keep records, avoid lost time, save steps, care for tools and equipment, make accurate charges, keep stock in dependable state, do the work that pays, watch purchases for discount savings, that's the way to manage the fleet shop for profit. Reducing shop practice to the simple formula of keeping simple records is the first step in making faithful hands of shopmen and in promoting their efficiency.

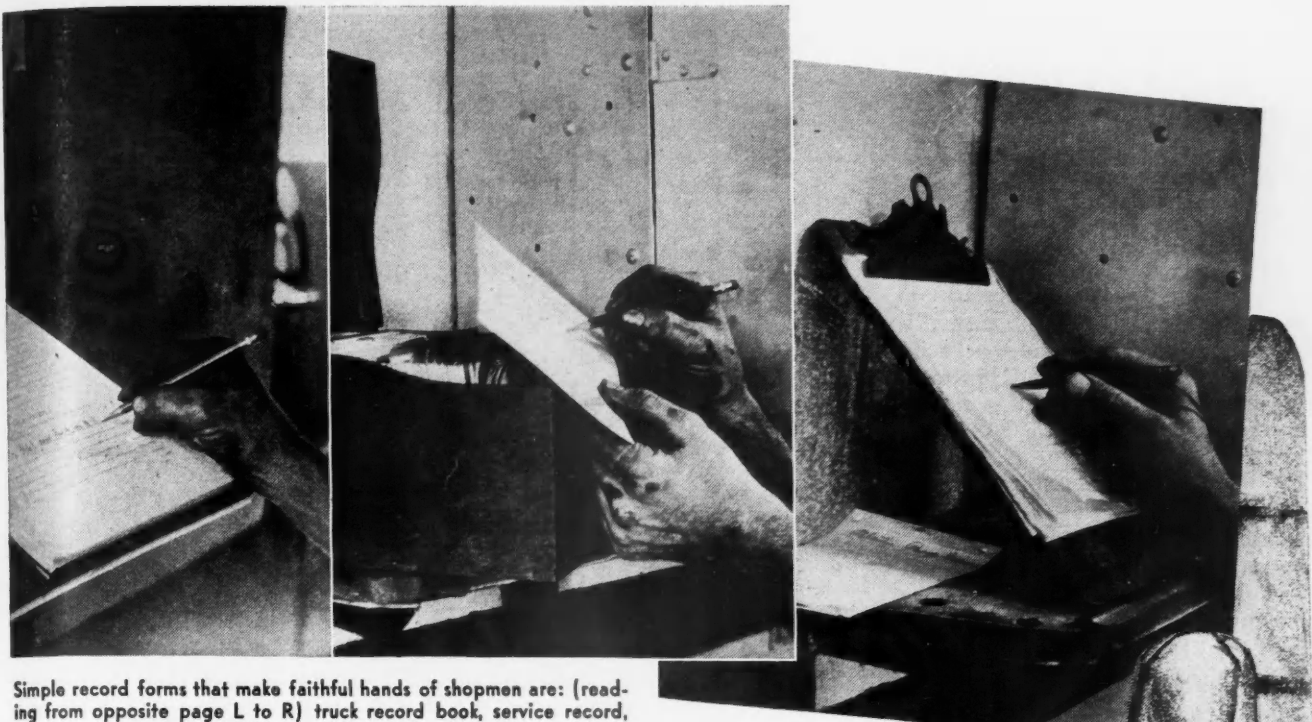
Methodical line-up of all activities makes this path to profits easier. A

division-of-labor schedule for the day must be worked out. Our service shop takes care of the gas, oil, water, air, greasing, washing, polishing, top dressing, tire work, brake work, body repairs, tune-ups, and every other service job that can be efficiently done by us. Complete paint jobs, machine shop work, special electrical jobs, radiator and new body jobs are sent out.

Working time is carefully proportioned. Men are carded and a punch clock does the accounting. Four men service 17 trucks and eight passenger

**By BILLIE BURGAN**  
Hage's Ice Cream Co., San Diego, Cal.





Simple record forms that make faithful hands of shopmen are: (reading from opposite page L to R) truck record book, service record, job sheet, battery record and the tool tab

cars and do some plant work, too. A fifth man is employed two or three weeks every 60 days for polishing and touching up damaged finishes. Division of labor is as follows:

One man on at 7.30 a. m. Off at 5 p. m. Off Saturday afternoon.

Two men on at 8 a. m. Off at 5 p. m. Work Saturday afternoon.

One man on at 9 a. m. Off at 6 p. m. Works Saturday afternoon.

All have 1 hr. for lunch. The early man cleans shop and wipes up oil spots as this is the only hour in the 24 that the garage is clear enough for such work.

Service procedure is routinized so that each man knows what he has to do from day to day. Managers' and salesmen's cars receive first attention. They are washed, dusted, filled and parked to go. By 10.30 a. m. all light car service is complete. Starting here, trucks are coming in, and on through the day until at 6 p. m. when all are washed, serviced and parked in their stalls. Trucks begin departing at 1 a. m. and by 7 a. m. all except two reserve trucks are en route.

**T**HE service plan. A positive distaste for writing by shop men causes us to think and plan in terms of little writing. For instance: instead of writing a service description on the record, a mechanic writes only a date in the

space provided for each service to tires, batteries, greasing and inspection, and drainings.

Drainings are on the even thousands, as 2000, 4000, 6000 and so on, and the date is written in red.

To make it easy to remember, we use the truck number as the date for inspection and greasing. No. 1 on the first of the month, No. 2 on the second and on through.

Service batteries on Tuesday—tires on Thursday of each week.

Garage daily report. To charge out gas, oil, grease, and hours of labor only the amount is written in the space for it on the truck number line on the daily report.

Parts and material charges. A bill of parts costing more than \$1 is by requisition, less than \$1 is by cash . . . saves bookkeeping.

A monthly memorandum charge sheet shows items taken from garage stock. An entry on this sheet would carry our truck number, date, item and price.

Accounting department posts from this sheet. It takes the place of many small invoices each month and saves time for both office and garage.

A "want" pad is used to note items running low which helps to keep stock in dependable state.

Keeping records. A year page for every car in the fleet is in this book and in the service file. Entries in this book

consist of dates, names of materials, prices, speedometer readings, sources of supply names, brief job descriptions, paint jobs and prices, body weights and sizes, load descriptions, sizes and weights.

This is really the "fleet journal" because first entry of anything of more than passing importance is entered here for reference. Later such items as tires and brake linings are pasted to the current service record in the file containing service information.

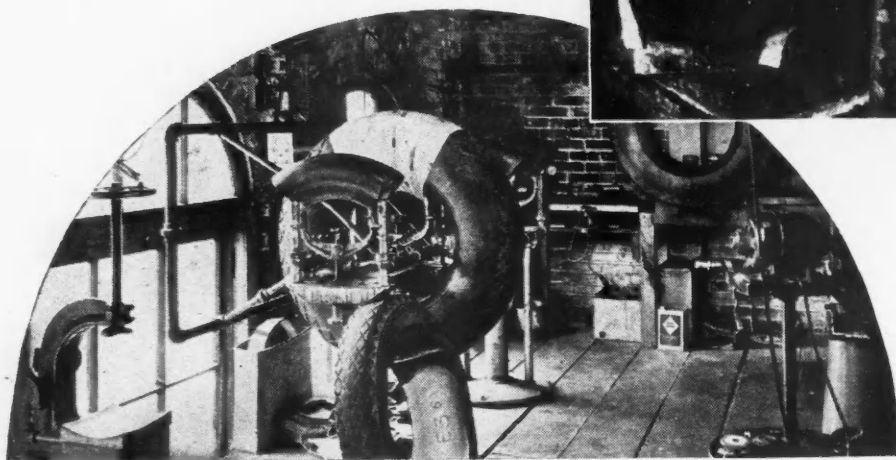
(TURN TO PAGE 38, PLEASE)



**"D**OES it really pay to vulcanize a truck tire?"

"I never have any luck with repaired tires."

These are the familiar remarks of many fleet operators. My answer is definitely, "Yes." Most of the Pacific Highway Transport Co.'s 115 trucks are equipped with 9.75/20 tires and the average mileage of all 9.75/20 tires we scrapped during the year 1935 including several whose useful life came to an abrupt end through some accident, such as being run flat, etc., was 57,513 miles, operating over West Coast highways. The greatest mileage received from any one tire was 113,423 miles and the least was 21,071. They ran an average of 19,026 miles before being repaired and 38,487 miles after being repaired. One section job ran 99,752 miles. Of course some of the tires would have run some distance more without necessarily having to be repaired at that time, but



Above—Tireman Criswell holds the matrix used in vulcanizing the tire shown at the left. Opposite—Draftsman's details of the vulcanizing process described in the story. Left—A corner of the shop where Criswell performs his tire operations

## The Value of Vulcanizing

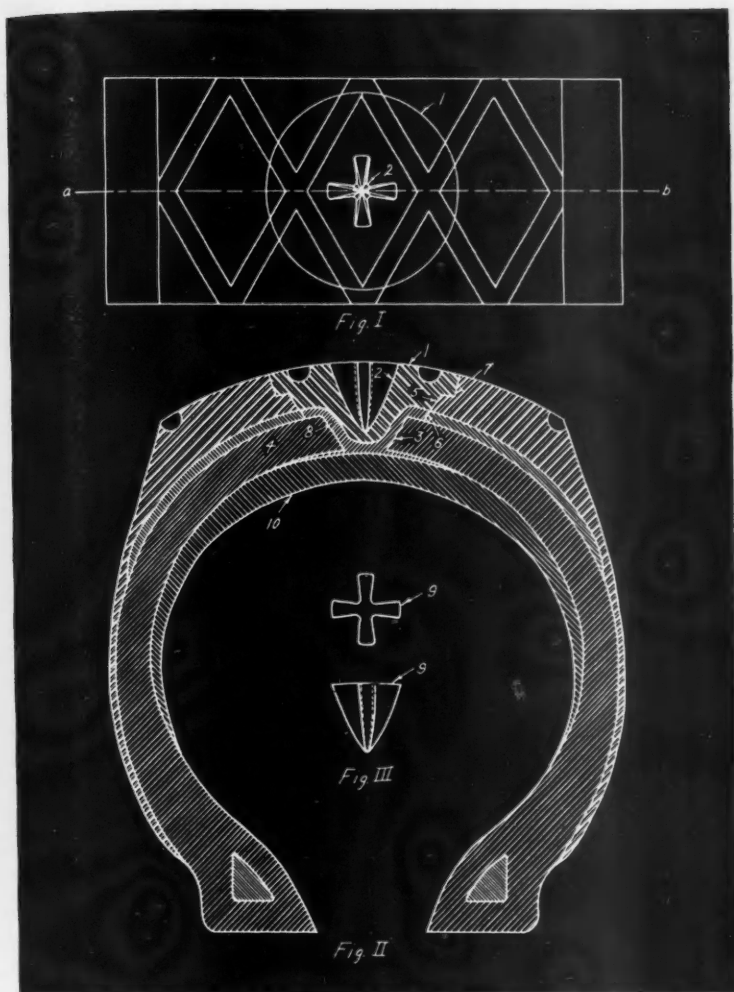
we find it a good policy to repair all cuts of any size as soon as possible. On the other hand, any number of tires would have been practically worthless after the first few miles, if they had not had sections put in them. For instance, a year ago we purchased some new semi-trucks and trailers equipped with 9.75/20 tires. One truck had run but 387 miles when it picked up a broken spring leaf in one of the rear

tires. A section was put in the tire and it was put back in service in its original position on the truck. It ran 29,637 miles on the rear wheel of the truck and was then shifted to the semi-trailer. To date it has run 42,175 miles. This tire would have been a total loss after the first 387 miles if it had not been repaired as the hole was too large to have been held by a boot.

These tires that give us such good

mileage are all repaired and vulcanized in our own shop. The vulcanizing shop was installed with the idea that if it paid to repair one's own trucks, why not tires?

I was placed in charge of tire maintenance and my only instruction was, "Make the tires pay a dividend, we know nothing about them." In order to determine whether the tires were paying a dividend, it was necessary to



proved methods of repairing tires but to no avail. I came to the conclusion that the best thing to do was to let the tires run as long as they would without molesting them or if they were cut entirely through to just put in a boot. The trouble with that was the cuts enlarged rapidly and eventually the tire wore out at that spot while the rest of the tire was in fair condition. The desired dividends lay in the yet good portion of the tire that had to be thrown away. I reasoned there must be some way to put in a repair that would last as long as the rest of the tire with a small percentage of failures.

**A** TIRE with a fairly large cut through it backed by a boot seldom blew out. The reason is that the open cut is allowed to flex freely without friction. I dissected all section jobs which blew out and discovered that invariably there was separation between the rubber plug and the skived ends of the ruptured cords. This separation caused friction which developed heat. The heat caused the repair to blow out by softening the rubber and disintegrating the cotton fabric or cords. The solid rubber plug and the cotton fabric of the carcass are of essentially different texture, therefore, it is impossible to have the flexibility, compressibility and resiliency of the two the same.

The ideal repair would, therefore, in-

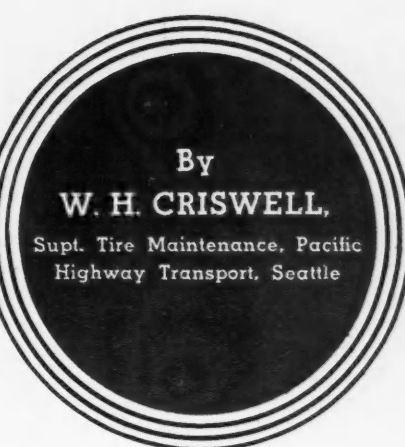
**TIRE-DOCTOR CRISWELL** of Pacific Highway Transport makes injured tires pay dividends by performing a special operation in which a cavity in the tire plug permits flexing of the vulcanized section. This eliminates the possibility of separation between the rubber plug and skived ends of the ruptured cords. Here in detail, is his method, which adds miles to tire life.

## Is in the Method

keep a complete record of each tire as to mileage and cost of repairs. Therefore, I branded each tire with an individual number and installed a card system. I started in on the theory that if tires were carefully inspected and cuts were promptly repaired before they had an opportunity to enlarge and for separation to set in, the tires would last much longer.

I repaired every cut of any size

for a while and then after they had run about five thousand miles, the spots began to peel out or the section jobs to blow out. I became quite alarmed. The tires which blew out were practically a total loss. I thought possibly my work was at fault, so I sent several tires out to other shops to be repaired, but their work proved to be no better than my own. I visited other repair shops, studied and tried all of the ap-

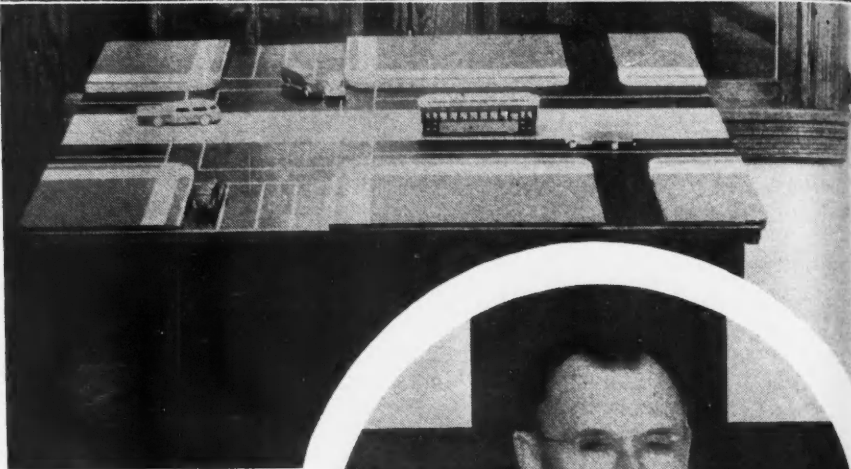


corporate the desirable frictionless properties of the open cut and yet have the ruptured ends of the cords sealed against the intrusion of the destructive elements, water and sand. I began to experiment and eventually developed  
(TURN TO PAGE 66, PLEASE)



THE idea of training drivers to administer first aid to the injured on the highways is rapidly gaining ground among fleets because of its good-will promoting features. This opportunity to make drivers safety conscious and at the same time perform a public service and gain public goodwill is available to all fleets both large and small through the Red Cross which has skilled instructors ready and willing to train drivers in first aid methods at no cost to the operator.

Here is the first of the driver first-aid stories describing how drivers for the Theo. Hamm Brewing Co., Milwaukee, were so well trained in first aid that they had only two accidents in 1935, gave first aid to 500 injured, saved three lives directly and 20 lives indirectly and won the gratitude of the public and state officials and the highest awards from the Red Cross.



By PAUL SCHULER

Director of Transportation and Safety,  
Theo. Hamm Brewing Co., St. Paul, Minn.

# TRUCK DRIVERS

## Trained to Administer

**W**HAT American truck operator equalled or excelled the safety record made by the Theo. Hamm Brewing Co. fleet in 1935? The St. Paul, Minn., Hamm fleet attained a total of 852,000 miles during 1935 and had only two accidents!

In addition to that Hamm drivers and helpers gave first aid in some 500 minor injuries, gave vital first aid treatments in 20 serious road accidents and were directly responsible for the saving of at least three lives, although it is likely that many more were preserved.

One Hamm driver has been awarded

a life-saving citation by the American Red Cross.

The Hamm fleet has received the highest recognition from the Minnesota state industrial commission for the high record of safety obtained. Safety di-

rectors, safety publications, newspapers and many other officials and organs interested in safety have given great praise to the Hamm operation.

It all began in the basement of the Hamm garage. There, a first aid school

*First Aid*  
**Win Goodwill of Public**





Above—Driver Walter Lemon points out the "first-aid" sign that is on every truck in the Hamm fleet. He is holding a first-aid kit and on his sleeve may be seen both the American Red Cross insignia given to graduates of the first-aid training school and the symbol of the Hamm Brewing Co. Opposite page shows two Hamm drivers administering first aid. A tourniquet has been applied to the arm of the victim and a bandage about his head. The miniature street intersection and models are kept in the office of Safety Director Schuler for the benefit of drivers who have had accidents

meets five nights each week. Any employee of the Hamm organization may attend the school, but attendance and graduation is compulsory for drivers and helpers. Each man attends only one night a week, but so popular has become the first aid course that it is necessary to operate the school five nights a week.

The preliminary first aid course requires attendance one night a week for 11 weeks. The advanced course requires attendance one night a week for seven additional weeks.

Since the school was started, a total of 332 Hamm employees have attended and been graduated. At present there are an average of 30 employees in each nightly class. It is easy to be seen that first aid is a popular subject.

The truckmen are given the prescribed first aid course which includes practically everything a trained layman can do to preserve life and limb at the scene of an accident.

It is just as important for our driver to know that a man with an injured back must not be moved by inexperienced men as it is for them to know how to apply artificial respiration or

digital pressure on a flowing wound.

The school room is adequately equipped with charts, diagrams, dressings, splints (rough and finished) of all sizes, manufactured and improvised litters and all manner of devices and apparatus for caring for the ill and injured. Students are required to apply dressings, treat the "drowned," carry the injured and meet practically any "emergency" that they might encounter on the highway. When they finish the school they are thoroughly trained in first aid and are given an American Red Cross First Aid chevron to sew upon their left sleeve.

An interesting example of the thoroughness of the school is found in the little "one man play" each driver is required to stage before his fellow students. He must assume the role of a driver, at the scene of an accident, telephoning for a doctor. The student is handed a telephone and he goes into action. He "tells" the doctor on the other end of the wire, exactly where the accident has taken place, where the patient or injured person is at the moment, what the nature and extent of the injuries are, what first aid has

been administered, what medical supplies are on hand—and *the doctor must hang up first*. If the driver terminates the conversation he makes a grievous error and is immediately hopped on by instructors. Also the driver should have had someone else make the call so he could devote all his time to the victim. And a patient who complains of bad pains must not be moved.

On the front and rear of every Hamm truck is a metal sign saying "In case of accident stop this truck—driver first aid trained and equipped." The sign means what it says. If you're in a highway accident and a Hamm truck comes into view, you have the right to stop that truck and demand that the driver help you—but you won't have to make the demand. The driver is under orders to stop and help and even if he wasn't under orders, he'd stop and help anyway. Because he's safety minded and he's first aid minded. He'll stop anywhere and do anything to preserve life and limb. Best of all, he knows how to work in such an emergency. Moreover, each truck is equipped with a complete first aid kit.

(TURN TO NEXT PAGE, PLEASE)

# TRUCK DRIVERS

Trained to Administer

*First Aid*  
Win Goodwill of Public

Right—First-aid dispensary in the Hamm Brewery. It contains every first-aid facility. Circle—Driver Patterson, whose quick administration of first aid saved a girl's life, and won for him a life-saving award from the Red Cross. Below—Hamm drivers demonstrate a proper three-man lift designed to prevent complicating internal injuries



There are two outstanding cases on Hamm records where drivers saved human lives.

The hero of one was driver Benjamin J. Patterson. Patterson was going his daily rounds when he came upon an automobile accident. One Florence Pollock of Fargo, N. D., lay on the roadside. Her jugular vein and mastoid muscle had been severed. Patterson immediately applied digital pressure and took other first aid measures to prevent shock. It was an hour before a doctor arrived at the scene. When the doctor did arrive, he called Patterson's work "professional." The girl is alive today. Her letter, in Paul Schuler's office, states that Patterson saved her life and indicates her gratitude. The American Red Cross cited Patterson.

The other case is somewhat different. One cold wintry morning, two Hamm drivers arrived at the garage a little ahead of time. They noticed a big sleeper-cab truck parked outside and, for a moment thought nothing of it.

It was a foreign truck, probably a long hauler coming for beer. But finally, one of the Hamm drivers thought he would awaken the truck drivers and tell them that the brewery was open for business. As he swung open the cab door, he noticed that the motor was panting quietly and that both men in the cab were asleep.

Then, in a flash, the Hamm driver noticed something else. Both sleeping men had splotchy red spots on their faces. Instantly the Hamm driver knew that both men were suffering from carbon monoxide poisoning—fumes in the closed cab had gotten into their lungs. There was instant action. Six or seven other Hamm drivers whipped into the job of bringing those two truckmen back. They got them out of the cab, gave them artificial respiration, washed their lungs with oxygen, gave them back their lives. Both truck men were back on their jobs that afternoon, still frightened at their close call, but filled with undying gratitude for the training that is given all Hamm drivers.

The Hamm drivers find daily uses for their training. Not a day passes but one, two or three, sometimes more, will administer First Aid to some injured person. In fact, there is a little slotted box—for reports of first aid treatments.

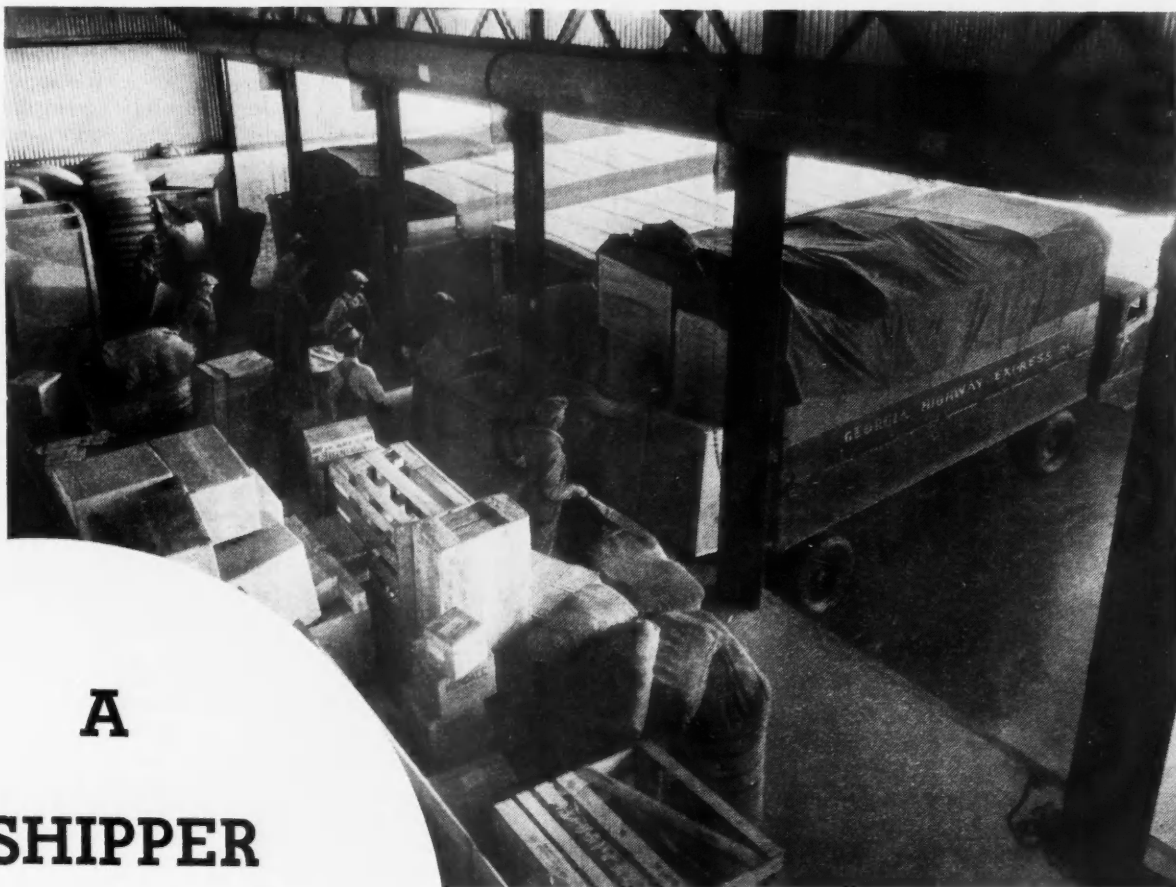
They take pride in their work. They take pride in keeping themselves out of accidents and helping out others who are in accidents. Of course we give them a cash bonus for driving without accidents and we also give them an engraved gold plate recording their accident-free service. But those things are not necessary. They want to drive safely and they want to provide safety and health for others.

It is true that our workmen's compensation costs were reduced 15 per cent in 1934 and 20 per cent in 1935—and that saved the company money—but the biggest thing we get out of it is knowing that our own people are not getting hurt and that they are helping others.

Every truck company should give its drivers First Aid training. Every salesman who travels by car, every service station attendant, in fact everyone should be given this training. It's simple and inexpensive to do—and the American Red Cross will help any company that is so inclined.

Now, let us see what is behind such a successful safety operation. In the first place, of course, there is William Hamm, Jr., president of the company.

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## A SHIPPER

### Gives Motor Freight CLASSIFICATIONS

the

*3rd Degree*

**A Constructive Criticism of Representative Truck  
Classifications Reveals Good and Bad Features**

**By RALPH L. WOODS**  
(Industrial Traffic Specialist)

**A**FTER several weeks of work with and study of the new truck classifications and tariffs filed with the Interstate Commerce Commission one is not able merely to say that they are good or that they are bad. In truth, they are both. One publication cheers, another saddens. One inspires admiration, another induces disgust. One is easy on the eyes and brain, another is

irritating. About the only generalization that safely may be hazarded is that a large and important step has been made by the trucking industry, and that for all its defects the present setup has a distinctly encouraging flavor.

In assuming the role of commentator and sometime critic I am not unmindful of the great readjustment that has been demanded of the trucking indus-

try, of the conflicting interests that had to be compromised, and of the lack of formulae and definitely fixed objectives in the establishment of rates, rules and regulations for transportation by motor truck. However, a keen appreciation of these difficult circumstances does not preclude a critical examination of the results and suggestions for revisions.

**W**HEN the first MF ICC No. 1 reached my desk in late March, I had no definite ideas how the new truck tariffs should be. Of course, like most industrial traffic men, I had hoped they would not duplicate the errors and frequent absurdities of railroad tariffs. I really expected that they would be more simply constructed and readable.

The first new tariff that I examined produced my first disappointment. It was the National Motor Freight Classification. Although it is not difficult to use and interpret, and in spite of the fact that it is certainly comprehensive, still it did not meet my expectations. No doubt the fact that the American Trucking Association sponsored this publication led me to expect a classification that would not hesitate to de-

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## EDITORIAL COMMENTS

# After Hours

BY GEORGE T. HOOK EDITOR

## The Whole Truth About the Railroad Safety Record

**W**E really dislike to throw sand in the railroads' journal-boxes on the subject of safety, particularly since safety is a matter in which conscientious effort, even if unaccompanied by accident reduction, is deserving of the highest commendation. And we wouldn't toss these scoopfuls of sand if it were not that the railroads have been guilty of a singularly vicious attempt to take unmerited credit while holding up highway transportation for scornful comparison.

The plain fact is that the safety record of the railroads is not what they would have you believe it is. The paid advertisements in the newspapers early this year, declaring that not a single passenger had been killed in a train accident during 1935, represented the statement of a partial fact, cleverly designed to create an impression with the public that the railroads had a perfect safety record while highway vehicles were killing thousands. This is slick propaganda of the type for which railroads have become notorious. It is the effect of this propaganda that we are out to wreck because even safety-minded representatives of the trucking industry are getting into the habit of blowing the railroad whistle by pointing to these sworn enemies of highway transportation as shining examples of safety perfection.

### 4889 Killed; 16,591 Injured

**T**HE raw fact is that the railroads' safety record is in serious collision with perfection. It may knock you off your seat—as it did us—to know that in 1935 no less than 4889 persons were killed and 16,591 were injured in what are described in official reports to the Interstate Commerce Commission as “train accidents and train-service ac-

cidents,” a distinction that we shall comment upon presently. These figures, which are an increase over those of 1934, represent the true accident record of the railroads so far as trains are concerned.

Now the railroads, mind you, were not stating an untruth when they blatantly called the public's attention to the fact that no passengers were killed in train accidents. The I.C.C. record corroborates that statement if you will regard leniently the fact that one was killed when a heater in a standing train exploded. But not until you study the book of rules governing the filing of statistics do you realize what opportunities there are for juggling facts and polishing half-truths to bedazzle the public.

### Two Kinds of Accidents

**T**RAIN-SERVICE accidents resulted in 17 persons killed and 1505 injured. To the layman the terms train accident and train-service accident represent no difference. The actual difference may be said to represent \$1 because, according to the rules, if the damage to equipment is less than \$150 it is a train-service accident and if more than \$150 it is a train accident. If the records had been reversed, that is, if the train accidents had resulted in the 17 passengers being killed, and no passengers had been killed in train-service accidents, there can be no doubt that the railroads would have advertised their train-service perfection and conveyed the same impression to the public.

### Dead But Not Killed?

**S**O that, speaking honestly, 17 passengers were killed and 1505 injured on the railroads in 1935. But even that

may not be the actual whole truth so far as *fatalities* are concerned. Let us explain. In computing highway accidents, the terms used are “deaths by motor vehicle” and “injuries by motor vehicle.” In other words, whether a person is killed outright or dies some time after the accident he is a “motor vehicle death.” It's different on the railroads. The book of rules defines “killed” as a death that occurs within 24 hours after the accident. Presumably, if a passenger should die 24 hours after an accident he has not been killed in the railroad statistical sense, and therefore not recorded as a fatality. We need not enlarge upon this point to show the opportunity for making unfair comparisons with statistics of competing forms of transportation that attempt no evasions in computing actual fatalities.

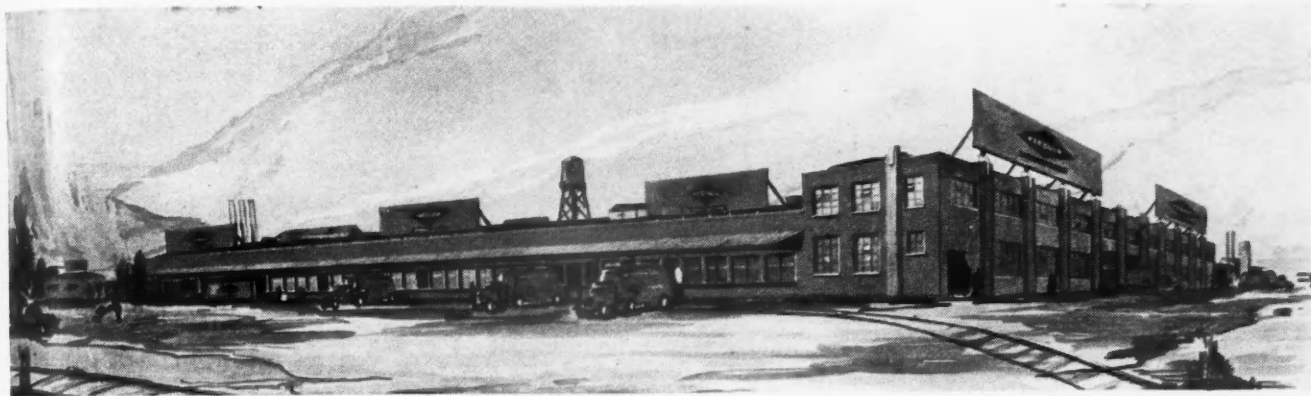
That disposes of the passenger angle which the railroad advertisements dished up so invitingly to the public. But what about the thousands of employees, the so-called trespassers and non-trespassers, and the motorists who were killed or injured by and on the railroads? Are they to be ignored in appraising the safety record of the railroads? Of course not. It is counted against trucks if a driver, a rider or a jaywalker is killed or injured.

The facts here (aside from the passenger angles) are that in train accidents 238 persons were killed and 689 injured in 1935, and in train-service accidents 4633 were killed and 14,030 injured. Of these totals 1680 were killed and 4658 injured in highway grade crossing accidents. The statistics are not to be minimized on the latter score. Admittedly there is difficulty in placing the responsibility for grade-crossing accidents, but there is also difficulty in placing responsibility for motor vehicle pedestrian accidents although the results are always recorded against the motor vehicle. Moreover, the railroads are not entirely innocent of negligence in grade-crossing accidents and consequently must accept the results as a reflection on their safety record.

### Railroads Are Negligent

**T**HIS negligence was never more competently portrayed than at the recent Interstate Commerce Commission hearings on the subject of installation of mechanical stokers on railroad locomotives. Twenty-five or 30 railroad firemen testified and their statements disclosed that fast passenger trains constantly are running on a chance-taking basis because overworked firemen are

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# Keeping Up with KEESHIN

**Bringing You Up to Date On the Pace-Setting Plans  
of the Country's Largest Motor Freight Operation**

**By GEORGE APPLEREN**

**An Authorized Interview With John L. Keeshin**

**O**FFICES of the Keeshin Motor Express of Chicago are thinking in terms of two, three, five and ten years hence. The things they are doing now, and the things they are planning to do, those about which John L. Keeshin tells, are all weighed in the sense of their adaptability to future performance.

At the rate which the Keeshin parent organization is growing it is sometimes difficult to lay plans on a firm foundation—but it has to be done. The front office in Washburn Avenue in Chicago doesn't issue many commandatory orders, believing that department heads can get along best by doing their own thinking and working out their own solutions, but this is one rule which did come from there and from which there can be no exceptions.

Ordinarily, when writing about a trucking concern statistics can be used

with reasonable assurance that they will stand up at least until the article appears in print. Statistics with the Keeshin outfit vary every day. The best thing that can be done is to give them as for the present, and then say

Above — Architect's drawing of the new Keeshin terminal, now under construction in Chicago, 1000 ft. long, 300 ft. wide with two loading platforms to accommodate 268 trucks. Since this drawing was made, new plans call for a third floor to the right wing. Right—This is one of 85 camel-back trucks recently purchased by Keeshin for pick-up and delivery service



that they will all be doubled, or more than doubled before two years have passed.

As examples:

**T**HERE are approximately 17 trucking lines affiliated with the Keeshin organization today. Petitions to acquire four more were placed on file with the Interstate Commerce Commission recently. Hearings on three petitions are scheduled in various parts of the country. There is no secret about the fact that Keeshin agents are dickering to acquire additional lines.

The Keeshin black triangle of "Dependable Service" emblazons some 80-odd terminal depots today. Another month should see that number swelled to more than a hundred. If present plans work out, as Mr. Keeshin explained them, two years should find the black triangle flying over at least 200 depots.

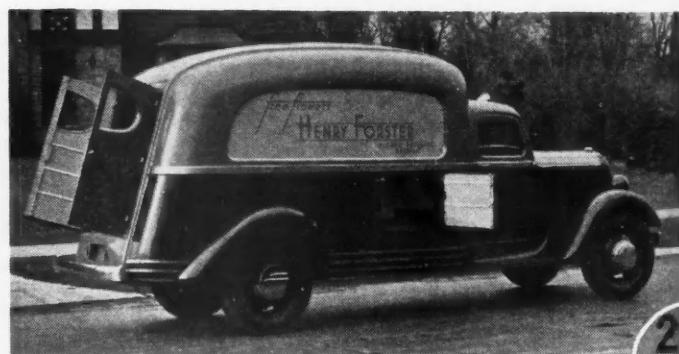
One of the things which is occupying considerable attention in the Keeshin offices right now is the problem of shorter runs to serve advantageous points between present termini. These in-between centers are called control points. Much progress has been made on this throughout Pennsylvania and other New England industrial states.

The Keeshin system employs more than 2,500 persons over the 17,000  
(TURN TO PAGE 72, PLEASE)



1. BROCKWAY may well be proud of this truck built for Cobako (Cortland Baking Co.), Cortland, N. Y. Chassis is a special model 160X, five-ton on a 240-in. wheelbase powered by a 95-hp. engine. The body, designed and built by Brockway, is 22 ft. 7 in. long, 8 ft. wide and 81 in. high. Upper panels of the body are of duraluminum. Interior is fitted with racks to accommodate 5500 standard size loaves of bread in 193 trays. Weather-tight compartments in the skirt in front of the rear wheels carry five 20-loaf trays. Rear doors are controlled by a spring lifting mechanism and are equipped with hydraulic snubbers and can be opened wholly or partially. A rear step closes flush with the body. Special equipment includes directional signals, illuminated front sign, exhaust-operated sand equipment for rear traction on icy surfaces, etc. The lettering in the rear is studded with reflector buttons.

2. DODGE says it with flowery colors. Impressed panels are pale lavender and the rest of the body and hood are finished in two-tone orchid and purple shades. Copper plating has been used on all parts and ornaments. Cab compartment is integral with the body which is insu-







lated with Dry Zero throughout. The floor has metal skid strips. Double doors are at the rear, and a special door on the curb side permits easy handling of small flowers. A raised screen shelf in the interior also facilitates handling of small packages.

3. WITH this Fruehauf semi-trailer and IHC chassis, the Olson Transportation Co. can add the words "in style" to the sign lettered on the side of the van. The "semi" is a Model 723 DF with 20,000 lb. capacity. The name of the operator on the nose of the trailer is outlined with reflector buttons, so going or coming you can't miss seeing this nifty job on the highway.

4. HIGHWAY Trailer designed and built this "semi" job for hauling grain to rural districts from the granary and also to haul flour to outlying towns. It's a model 77-B, 20-ft. frame. The steel body is 20 ft. by 8 ft. by 5 ft. with open top. Tarpaulin rack is on the nose of the trailer. Cab is de luxe. Chassis is a Federal.

5. TRAILMOBILE trailer model TD-22, Highland body and Diamond T chassis model 212 present a united front and Kay Bros. presents this advance unit in advance of its circus. It totes publicity and billboard men. Trailer has two sleeping berths for the billers, storage place for placards and other advertising material, a work bench and desk and typewriter. The wilder (shall we say?) animals are carried in other trailers of this motorized circus.

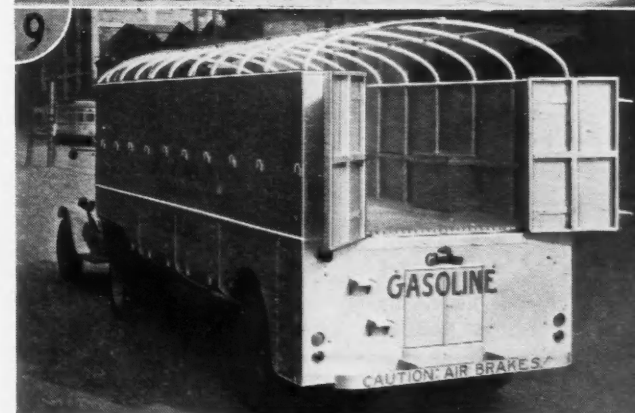
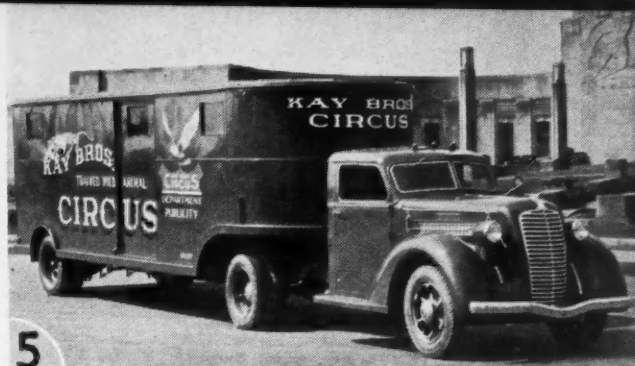
6. UNLIKE the "One Hoss Shay" this unit looks as though it were built to go on forever—and never fall apart. Tractor is a model IW-365 Studebaker. Edwards Iron Works built the trailer and body. The A-5 trailer is 24 ft. long. Body has solid roof, double doors and tailgate in rear. Cab is also an Edwards de luxe type with sleeper compartments. Illumination of trailer is by shielded lighting from the top.

7. MAREMONT Automotive Products built this refrigerator body for Cudahy. It is refrigerated with dry ice to maintain a temperature of 35 deg., and is insulated with 2 in. of Dry Zero in the roof, walls and floor. Inside dimensions are 11 ft. long, 74 in. wide and 66 in. high. Chassis is a Reo.

8. THIS is a Four Wheel Drive job of 13,000 lb. gross operated by Whiting between its plant and shipping base in Wisconsin on scheduled trips of 60 miles each. Fair weather or foul means nothing to this baby. It has the good appearance and the power to hold its own under all circumstances.

9. COLUMBIAN Steel Tank Co. designed and built this unusual combination tank and bulk hauling semi-trailer. The lower section is a tank for carrying 2500 gal. of fuel, while bulk products may be carried in the upper section. Lux-Witwer Wholesale Grocery of Topeka, Kan., uses it for hauling the fuel and groceries, thus carrying payloads going and coming. A tarpaulin keeps out the rain.

10. EASTON Car and Construction Co. are the builders of this dump body and Autocar is the packhorse (chassis to you). Body is a model GS side dump quarry body. Sides open out and the load slides off neatly. Chassis is a model UNFT, 96 in. wheelbase, 43,000 lb. gross. Operator is Pennsylvania Glass Sand Corp.

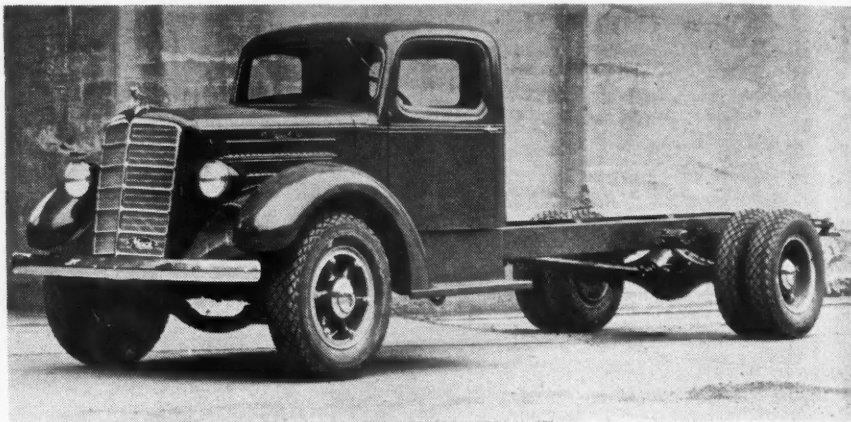


**M**ODERN styling comes in for special emphasis on the new Model EH, announced by Mack Trucks, Inc., which rates at 18,000 lb. gross and lists at \$2,250. Creased fender design with high valleys between the hood and fenders, a V sloping chromium-plated radiator grille, extensive use of chromium plating and de-luxe streamline cab with sloping windshield are among the features contributing to the pleasing design. The cab roof is built integral with the cab of all-metal construction. Safety glass is standard.

Model EH is offered in standard wheelbase lengths of 146 in. and 158 in. for the truck and 139 in. for the tractor chassis, with optional lengths at extra cost. Gross weight distribution of approximately 30 per cent front and 70 per cent rear has been achieved through set-back front axle design; the front axle being but 74 in. ahead of the rear of the cab.

A six-cylinder Model BG engine with a  $3\frac{5}{8}$  in. by 5 in. bore and stroke, develops 79 hp. at a governed speed of 2300 r.p.m.

Drive is from a single-plate clutch through a five-speed unit transmission. An overgeared fifth speed is available at extra cost. Rear axle is of the



Model EH rates at 18,000 lb. gross and lists at \$2250

## New Mack Model EH Has "Doggier" Look

single-reduction, spiral-bevel type, with double reduction drive at extra cost. The driveshaft has three needle-bearing universal joints with a large self-aligning center bearing. There are 6 optional ratios on the single reduction drive, ranging from 4.40 to 7.40; two ratios of 7.35 and 8.21 on the double reduction drive.

Four-wheel hydraulic brakes are vacuum booster actuated. Total foot brake area is 370 sq. in. The chassis frame is  $8\frac{1}{2}$  in. x  $\frac{1}{4}$  in. x  $3\frac{1}{4}$  in. It is staunchly braced by three, pressed steel, deep-flanged box girder cross members with alligator jaw attachment to the side members, and two channel cross members.

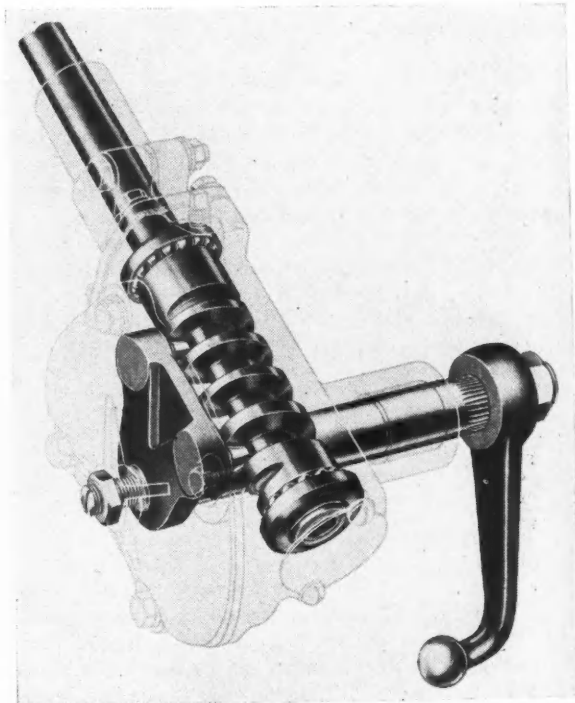
## New Ross Gear for Better Steering

**T**HE new Ross Twin Lever steering gear manufactured by the Ross Gear and Tool Co., Lafayette, Ind., provides a greatly increased mechanical advantage for the driver. Steering linkage changes made possible by the application of the new gear, approximately double the ability of the driver to turn the front wheels in the parking ranges. Reversibility is minimized by large reduction of motion.

The angular arm travel is 100 per cent as compared to 80 per cent on the present Ross gears. Shorter turning radius can be obtained without sacrificing steering ease as greater lateral travel of the drag link may be obtained without lengthening the steering arm. This feature is desirable for maneuvering trucks in traffic areas.

Shorter steering arm is made pos-

sible by the greater angular travel available. This results in greater mechanical advantage for the driver and minimizes shock on the steering gear and the driver due to impacts against the front wheels. In the normal driving range two studs are in engagement with the cam as compared to a single stud on previous designs, reducing unit pressures 50 per cent. As the gear moves away from normal driving range into parking range, the usual single stud is in working position. However the effective leverage of the single stud in-



Twin lever steering gear with 45 per cent more leverage

creases rapidly under this condition and in full parking position the effective leverage is 45 per cent greater than in present Ross gears.

*The fact remains—*

# HYDRAULIC BRAKING

*...is demanded*  
by hundreds of thousands  
of car and truck buyers!

ALL truck operators don't like the same kind of engines—or the cab and body styles—or the same wheelbases—or the same sort of axle equipment. Make all trucks alike and buying would fall off enormously.

All truck operators don't like the same kind of stopping.

But the FACT remains—

Thousands upon thousands of truck and bus buyers **do** demand Hydraulic Braking. For more than a dozen years Hydraulic Braking has been winning new friends year after year, as service proved conclusively the soundness and enduring good performance of Hydraulic Braking.

Car, truck and bus manufacturers in every price class—high, low and medium—have swung to Hydraulic Braking. The wisdom of their judgment is reflected in the sales records of their products.

HYDRAULIC BRAKE COMPANY  
DETROIT, MICHIGAN

**LOCKHEED HYDRAULIC**  
*Four* **BRAKES** *Wheel*

OFFICIALLY SERVICED THROUGHOUT THE NATION BY WAGNER ELECTRIC CORPORATION

JUNE, 1936



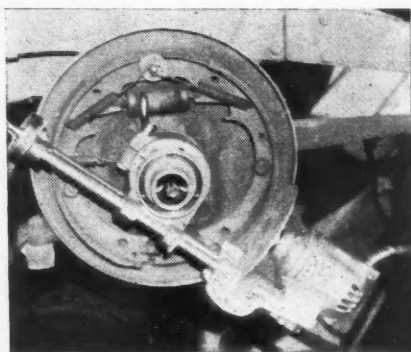


# New Products on Parade

Descriptions of the Latest Items Put on the Truck Market by Equipment and Specialty Manufacturers

## S-M Brake-Dokter

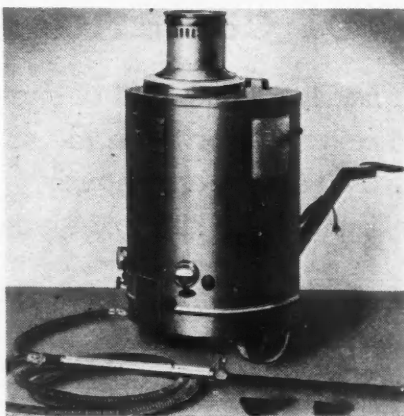
THE Stiles-Medart "brake-dokter" grinds relined brake shoes to fit drum surface at all points and the wheels may be replaced as soon as grinding is complete. A universal double-acting adapter instantly fits all front spindles and tapered rear axles. A special adapter quickly mounts on all full-floating axles and truck spindles. The unit will centralize, grind, and adjust brake shoes to exact drum size on the vehicle in one operation, reducing the time for this operation by one-half, the maker claims. Stiles-Medart Co., 3535 DeKalb Avenue, St. Louis.



Brake Doktor grinds relined shoes

## Model G Jenny

HOMESTEAD Valve Mfg. Co., Coraopolis, Pa., is now marketing a new Hypressure Jenny, Model G, which operates on the same principle as previous models, but is more compact and smaller in design. Cleaning is accomplished by forcing a combination of water vapor, hot water and cleaning chemicals through a nozzle over a pressure range of 50 to 150 lb. per sq. in. The unit is mounted on rollers and may be easily moved from place to place. Price is \$395.

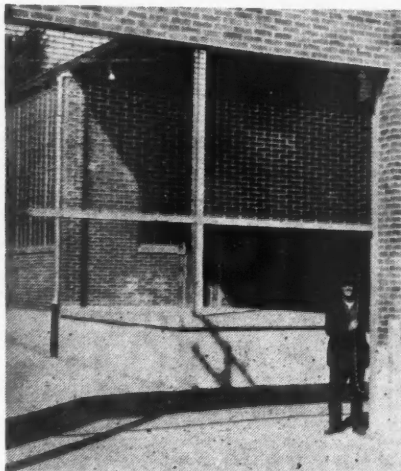


Smaller and compact Model G Jenny

## Steel Grilles

GALVANIZED steel rolling grilles are the product of Cornell Iron Works, Inc., 3600 13th Street, Long Island City, N. Y. Rolling grilles lock into channel-shaped side guides at the jambs and will resist a pressure of over three tons per foot of height. The grille shown is motor operated with straight bar design harmonizing with the brick. It raises by coiling around an overhead shaft and may be either hand or power operated. An eight-page catalog of illustrations and descriptions of grilles is available.

Galvanized steel grille rolls up



## Watson Transmission

H. S. WATSON CO., national distributors for Watson-Brown-Lipe auxiliary transmissions, announces a new auxiliary transmis-

sion designed especially for all makes of 1 to 3-ton trucks. It is said to have a more powerful underdrive ratio than is generally available on trucks of this size.

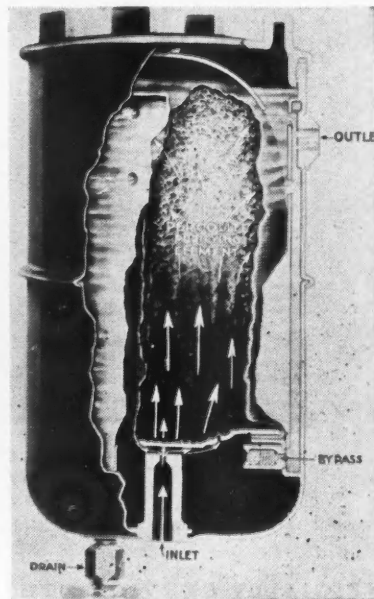
This new transmission when installed behind the usual 4-speed transmission, provides eight forward speeds. The auxiliary ratio is 1.96 to 1. It is said to be priced lower than similar equipment previously offered. This unit is adapted to special short-haul trucking jobs where power, or slow travel is necessary. H. S. Watson Co., 522 Fourth Street, San Francisco.

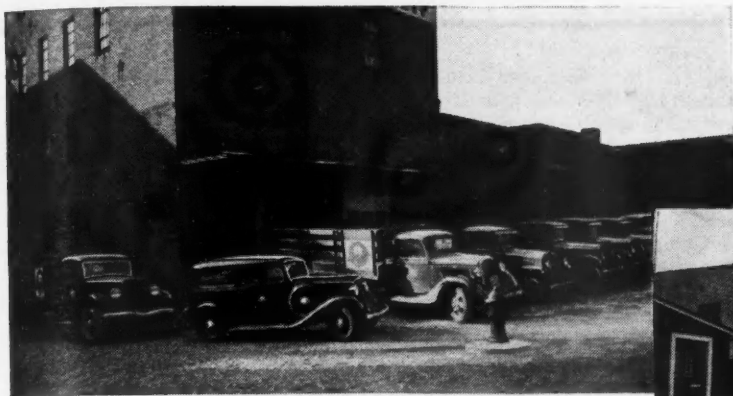
## Handy Oil Filter

A NEW oil filtering and conditioning system is being marketed by the Handy Governor Corp. of Detroit. This Handy oil conditioner uses a purifying element known as Percolite, a special fibrous compound. It removes abrasives and other foreign materials, neutralizes acid, etc., so the manufacturers claim. A drain permits emptying the water and other materials thus collected. The chamber containing the filtering element is assembled in the form of a cartridge, renewable when found necessary to do so.

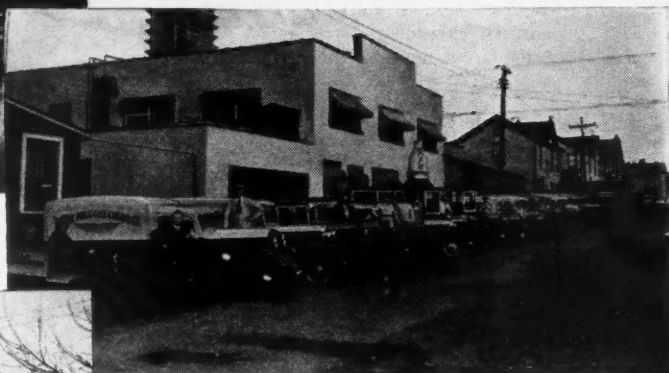
[Other Products Page 32]

Handy oil filter and conditioner





Wilkins Rogers Milling Co., Washington, D. C.



Hazle Milk &amp; Ice Cream Company, Hazleton, Pa.



Chambersburg Branch of Capital Bakers



Georgia Power Company

## These four fleets, totaling 614 trucks, give proof that Exide Batteries cut costs . . .

**H**ERE are four representative operators—with trucks of various types, used in widely different kinds of service—who agree on one important fact: *You can't buy a more economical battery than an Exide.*

Exides are rugged, well-built batteries that give thousands upon thousands of miles of trouble-free service. They mean freedom from costly tie-ups, dependability on short hauls or long, in winter and summer alike . . . but you pay no premium for the extra quality of an Exide.

It has been the experience of hundreds of others, as it can be your own experience, that the way to cut battery maintenance costs is to standardize on Exide.

THE ELECTRIC STORAGE BATTERY CO., Philadelphia  
*The World's Largest Manufacturers of Storage Batteries for Every Purpose*  
Exide Batteries of Canada, Limited, Toronto



# Exide

## BATTERIES

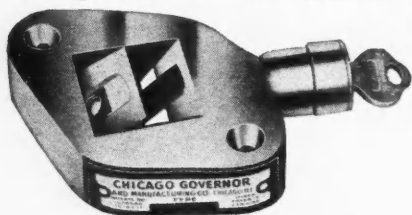
### FOR EVERY TYPE TRUCK

## NEW PRODUCTS ON PARADE

### Governor for Light Trucks

CHICAGO GOVERNOR & MFG. CO., 507 South Laflin St., Chicago, is now marketing an inexpensive, highly efficient key-type governor, suitable for salesmen's cars and light delivery trucks of all makes carrying loads not exceeding 1 ton.

This governor is cut down to the small-



Chicago governor for light trucks

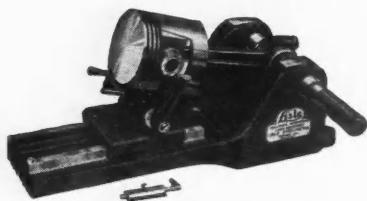
est dimension so it fits in easily between the carburetor and the manifold and can be installed in a few minutes. It has a speed range of from 20 to 50 miles. The adjustment is made with the key which is removed when the proper speed adjustment has been made and then the governor is sealed to the stud to avoid tampering. The retail price is \$3.25.

### Dietz Pilot Signal

THE new Dietz "Pilot" direction signal employs four separate arrow lights, one at each corner of the vehicle, front and rear, thus presenting a clear warning to vehicles approaching from either direction on the road. The driver's control of this signal is a small metal box containing switch, fuse, relay and a pilot light. This is attached to the steering post, under the wheel. R. E. Dietz Co., New York City.

### Lisle Rod Aligner

CONNECTING rods can now be aligned and straightened in less than two minutes according to the Lisle Corp., Clarinda, Iowa. All rods up to 15 in. long can be handled by the new Lisle aligner, the



Aligner for rods up to 15 in. long

cradle moving backward and forward on ways, and adjustable to any length rod. Twist and bend can both be checked from one setting, without removing the piston assembly, and without removing the rod from the aligner. Any inaccuracy in the rod may be instantly registered on the gage.

### Power Take-Off Unit

THE Sullivan air compressor especially designed for truck mounting and truck operation, is of two-stage air cooled design with air cooled intercooler. It is for mounting on a 1½-ton chassis.

A Hercules split-shaft power take-off

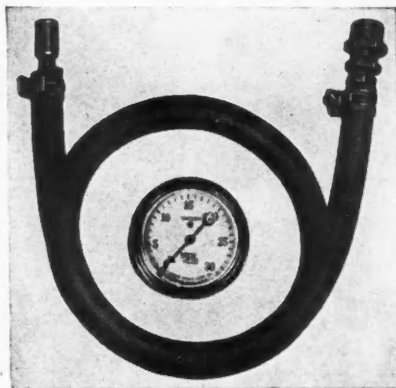
makes available all the horsepower and torque of the truck motor. Power take-offs are in wide use in the operation of electric welders, rock crushers, grinders, core drills and other equipment. Contractors, utilities and municipalities will find this outfit especially valuable. Hercules Steel Products Co., Galion, Ohio.

### King MT-250

THE Electric Heat Control Co., Cleveland, announces a new unit, the King MT-250, which is a combination of the King MT-210 ignition tester, with the exhaust gas analyzer added. It is claimed that the exhaust gas analyzer will indicate whether maximum power is being obtained from the fuel, and if not, where the trouble lies.

### Vacuum Tester

THIS vacuum testing outfit is a time-saver in locating leaks in the vacuum system on trucks and trailers as well as in determin-

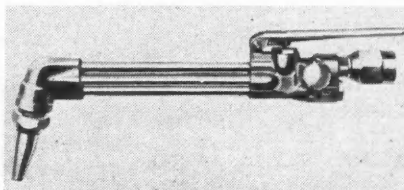


Vacuum tester for locating leaks

ing the amount of vacuum developed by the motor. The outfit includes an accurate vacuum gauge, a length of hose, and an assortment of fittings sufficient to make almost any connection. Vacuum Power Equipment Co., Detroit, Mich.

### Oxweld Type CW-22

A NEW oxy-acetylene cutting attachment known as the Oxweld Type CW-22 has been announced by The Linde Air Products Co., 30 East 42nd Street, New York City. This new cutting attachment handles light sheet metal as well as all but the heaviest work at speeds and efficiency equal to those of the full size cutting blowpipe. The Type CW-22 cutting attachment can be used on

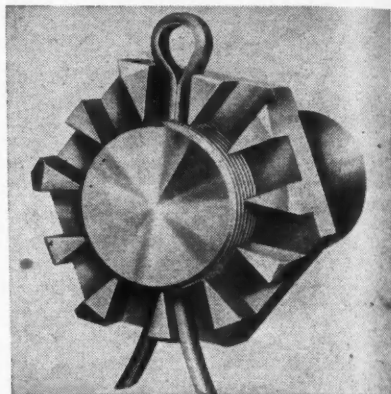


Oxweld for light sheet metal

either the Oxweld Type W-17 or W-22 welding blowpipe handle.

### Cooke Nut

IN place of the usual six adjustments per turn, the Cooke micro-slotted nut offers from 10 to 22 adjustments depending on the size. This is accomplished by locating

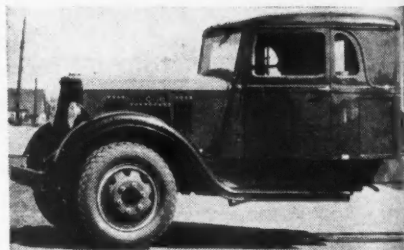


Cooke nut has 10 to 22 adjustments

the keying wedges off center from one another, so that two keying positions are possible for each slot. A special key is supplied with each nut, the key being trimmed off to an internal V-shape so that it spreads readily when it strikes the wedge on the nut. Blatchford Corp., 80 E. Jackson Blvd., Chicago.

### Valve Grinding Unit

A PORTABLE valve grinding unit, complete with everything necessary to do a first class valve job, is the latest development of Black & Decker Mfg. Co., Towson, Md. The valve refacing machine is mounted on a cabinet which contains an electric drill and valve seat conditioning equipment, and is wired for tools and lamp. A 20-ft. cable supplies current from the wall socket. Storage space is provided for hand tools, drills, spare parts, etc.




This is a restyled 1936 Dodge sleeper cab. The sleeping compartment which runs the full width of the cab behind the driver's seat has a special bed spring mattress. Small door towards rear of cab is the luggage compartment

### Gatke Brake Block

HI-POWER brake blocks manufactured by the Gatke Corp. of Chicago, are now being sold on a guaranteed mileage basis. These blocks are made in all shapes and sizes for various types of power brakes. The improved block has been subjected to a special process giving it a high heat-resistant quality.

[Other Products Page 42]





**I picked the  
wrong tree  
to bark up**

"I thought I had the oil cost problem run down and treed.

"I compared prices per gallon... made some figures on a piece of paper... and deliberately went out and bought a lot of cheap oil for my fleet.

"Wrong? I couldn't have been more wrong if I'd been the one who told Noah that it wasn't going to rain! That cheap oil turned around and bit me right where it hurts most—in the pocketbook!

"Sure—I saved a few cents a gallon on the purchase price. But—that cheap oil formed a blanket of carbon in my cylinders. It choked up the oil lines with gum and sludge. It made the engines overheat

and caused excess wear. And it got so thin that on long hauls it just laid down and died! So I decided it was high time to bark up the *right* tree. For only a little more per gallon, I got Gulflube—a *real* premium oil. From that day on, my maintenance costs took a nose dive. My hat's off to Gulf for what the Multi-sol process has done for Gulflube—and me!"

*Gulflube is a premium-quality oil selling at non-premium prices.* It cuts repair bills to the bone—because Gulf's exclusive Multi-sol refining process strips it clean of carbon, gum and sludge-forming compounds. It flows more freely in cold—stands up better under heat—and has an extra high viscosity index.

**GULFLUBE  
MOTOR OIL**



If you are a fleet owner, fill out the coupon below. It will bring you the complete Gulf story—how Gulflube can mean real savings to you. Mail the coupon today!

**THIS OFFER CAN SAVE  
YOU MONEY!**



CCJ-66

GULF, 3800 Gulf Bldg., Pittsburgh, Pa.

Gentlemen:

I should like to get the complete money-saving story on Gulflube.

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

# News

## SUMMARY of the Past Month

### ICC Reverses and Suspends Pick-Up Sticks By Original Order Suspending C&D Service Until Nov. 1

The Interstate Commerce Commission, on Saturday, May 23, suspended until November 1, the store-door collection and delivery tariffs that were to have become effective on Eastern railroads May 25. Action was taken by the I.C.C. prior to the completion of plans by 2000 truckers for calling a general trucking strike in the East. It also followed a petition filed by the American Trucking Associations, Inc., asking the I.C.C. to withdraw the order issued several weeks earlier granting rails permission to conduct free store-door pick-up service for less-than-carload freight without the allowance feature.

The protesting truckers, attending a mass meeting May 24, appointed a representative to file an order of appearance before the I.C.C. hearings to be held prior to November 1. It is charged by truckers that railroads intend replacing thousands of truckers, now handling pick-up and delivery freight in New York City, with a few large trucking organizations.

### NAPA Has Chevrolet Manual

A 48-page Mechanics' Repair Manual for Chevrolet has just been published by the National Automotive Parts Association, and is now available through all NAPA warehouses and jobbers.

### DeLong is Waukesha Head

At the recent meeting of the board of directors of the Waukesha Motor Co., James E. DeLong, vice-president of the company who succeeded H. L. Horning as general manager, was elected president, and James B. Fisher, chief engineer of the company, was elected vice-president. Mr. DeLong's association with the Waukesha Motor Co. dates back to 1923 when he joined the company as field engineer in the development of the company's products for the oil industry.

### McRoberts is Linderman Chairman

Samuel McRoberts has been elected Chairman of the Board, Linderman Devices, Inc., at a recent meeting. P. M. Chandler, O. M. Johnson and J. Sterling Rockefeller have also been elected board members. B. A. Linderman is president of Linderman Devices, manufacturing and selling brakes for the truck, bus, and trailer fleet field.

### New Jersey Truck Show Nov. 3-7

The New Jersey Motor Truck Association is again sponsoring a motor truck show to take place in Newark, Nov. 3 to 7, inclusive. This will precede the New York Automobile show which will open on Nov. 11.

The Society of Automotive Engineers has been invited to its National Transportation and Maintenance meeting in Newark at that time, and the National Association of Motor Bus Operators has also been asked to hold its convention in Newark during the period.

### Banigan Joins Edison-Splitdorf

Leon F. Banigan, for 16 years editor of *Motor World Wholesale* and other Chilton publications, will join the executive staff of the Edison-Splitdorf Corp. on June 15 as merchandising director, according to an announcement by A. J. Clark, vice-president and general manager. The company, with headquarters in West Orange, N. J., is a subsidiary of Thomas A. Edison, Inc., and manufactures spark plugs.



E. W. Windsor, who has been appointed general manager of the newly organized automotive refinishing sales department of the Sherwin Williams company

### Railroads Report on Truck Investments

The Interstate Commerce Commission has ordered all Class I railways to furnish information regarding their investments in highway motor vehicle enterprises for the carriage of persons or property. Returns in compliance with this order are to be filed with the commission on or before July 1 next.

### Marvel Elects Kaltwasser

C. M. Kaltwasser was named President of the Marvel Carburetor Co., Flint, Mich., a subsidiary of Borg-Warner Corp.

### Traner Heads Borg-Warner Subsidiary

Emil C. Traner has been named president of the Mechanics Universal Joint Division of Borg-Warner Corp.

[Additional News Page 36]

### Truck Sales Hit New High With 20% Gain; Output Up 14%

From all indications the truck industry is going to enjoy the best year of its history. Indications are that the first four months will not only exceed the same period of 1935 but will pass the first four months of 1929 by a very comfortable margin.

During the first third of the calendar year's sales, approximately 198,500 new commercial vehicles were retailed, as against 165,204 for the like period of 1929. This is an indicated gain of 20 per cent, or approximately 33,000 units. New registrations for April amounted to 62,000 units, an all-time high for any month since the beginning of official registration figures in 1926. This is about a 20 per cent gain over the 51,817 units registered in March and 35 per cent over April, 1935.

April production was 90,346 units or 12 per cent over March and 30 per cent over April, 1935. The 304,256 units produced the first four months of this year exceed by 14 per cent the 267,908 units produced the same period in 1935.

### Ford Discount to Dealers

Discounts on Ford passenger cars were increased from 22 to 24 per cent effective May 10. The increase was not retroactive and hence does not apply to stocks in dealers' hands, nor does it apply to trucks and commercial cars on which the 22 per cent discount continues.

The quantity bonus announced by Ford in January is continued. This bonus affects dealers selling more than 100 cars annually and amounts to \$8 on 101 to 300 cars, \$10 on 301 to 500, and \$12 on 501 or more cars.

S. A. Jeffries who has been appointed chief truck engineer of the Studebaker Corp. He was formerly chief engineer of the truck division of Reo Motor Co.

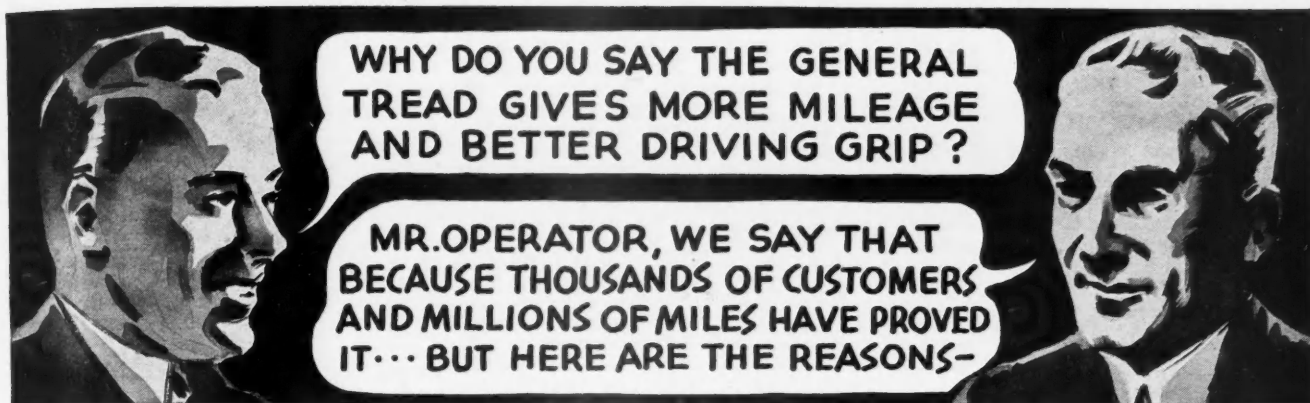


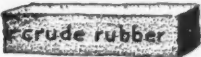





### Autocar Financing Approved




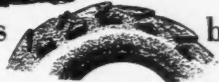



The revised refinancing plan recently submitted by the Autocar Co. of Ardmore to its stockholders, has been approved. It was also announced that the issue of new debentures amounting to \$310,000 has been purchased by the Phoenix Securities Corp.

### Service Managers Visit Autocar

Service managers of the various factory branches throughout the country visited Autocar headquarters in Ardmore, Pa., where they discussed current service methods and new mechanical developments.



*First* the  crude rubber  carbon black  sulphur and  other ingredients used in General tread rubber are the best money can buy. No second grade materials, no fillers; nothing is added merely for weight or bulk or to reduce costs. Proper compounding makes this rubber tough to resist chipping like this  and elastic like this  to give long wear.

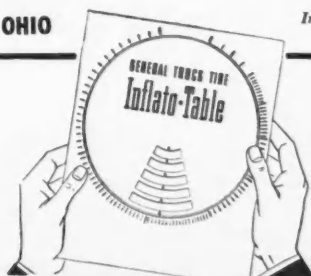
*Second* the design of the General Traction Tread gives better road grip because these square blocks  set at 45° angle to the line of travel act like wedges  when driven into the road surface. No slipping, sliding or spinning like this  The surface does not "wipe" nor scuff unevenly like this  but wears uniformly and evenly like this  for these three reasons: . . . (1) the blocks are short and square . . . (2) there are dozens of blocks like this  supporting and distributing the load at all times and . . . (3) each block over-laps half of every other block like this 

THE GENERAL TIRE & RUBBER CO. • AKRON, OHIO

In Canada—The General Tire and Rubber Company of Canada, Limited, Toronto, Ontario

### FREE! INFLATO-TABLE!

This inflato-table will tell you how much air to put in your tires. It will show you when your tires are overloaded. It will tell you how much load a certain size tire can carry with safety. *It's Free.* Go to your General Tire dealer and ask for yours.



GENERAL BUILDS a complete, highly specialized line of truck tires. GENERAL TIRE DEALERS are practical truck tire men with wide experience and accurate knowledge in fitting the right type and size of tire to every kind of job. THIS COMBINATION is worth real money to you. If your job is tough, call in the General Tire dealer and let him prove these statements.

# GENERAL TRUCK TIRES



## NEWS

(CONTINUED FROM PAGE 34)

## Young Appoints Ramsaur

W. R. Ramsaur has been appointed chief engineer of the Young Radiator Co., Racine, Wis. The company also announces the appointment of the C. E. Bull Co., San Francisco, as its West Coast representative.

## White Receives War Order

Government orders for 685 White and Indiana trucks, representing a dollar volume of \$1,312,000, have recently been received from the United States Departments of War and Agriculture, according to Robert F. Black, president of the White Motor Co.

Production on the huge orders was started immediately and deliveries will be made in June and July.

## New Borg-Warner Warehouse

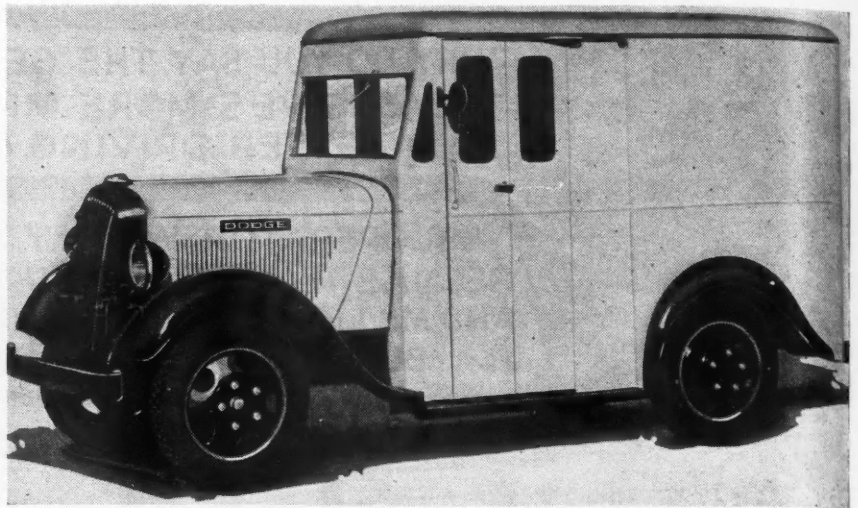
Borg-Warner Service Parts Co., a division of Borg-Warner Corp., will open a new warehouse branch in Philadelphia. Over 6200 sq. ft. of floor space will be used for stocking a complete line of automotive products manufactured by this corporation.

## Wilkening Adds to Plant

A contract for a monitor-type building of one story providing 22,500 ft. of additional floor space has been let by the Wilkening Mfg. Co., Philadelphia. The new structure will be situated on the property of the present plant, and is expected to be ready for production by September. Increased demand for Pedrick hydraulic piston rings necessitates the expansion.

## Bear Easy Payment Plan

A special, long term, easy-payment plan has been instituted by the Bear Mfg. Co. to carry on where the old F.H.A. left off. Three years to pay with easy monthly payments at low interest are popular features of the plan.



Mastercraft house-to-house package delivery body built by Luce Mfg. Co., features jack-knife side doors, rear door that opens inside of body lines, 42 standard milk case capacity, one-step entrance, and panels of 20-gage stretcher auto steel on the exterior. It is mounted on a Dodge LE30, 112-in. chassis. All hardware of the truck body is of the best quality. Door hinges are continuous or piano type, enhancing general appearance and giving maximum support. Outside hardware is chromium plate. The interior may be specially arranged so that insulation of partition between driver's seat, shelves, insulation of body, etc., is possible. Although this body is standard, larger bodies following the same front end construction are available.

## 40 Per Cent Fords

A total of 1,424,760 Ford truck and commercial car units have been licensed for operation in the United States as of January 1, 1936. The total of all trucks and commercial cars licensed to operate at the outset of the year was 3,535,661, a gain of 7.9 per cent over 1934. More than 40 per cent of the total were Fords.

## First-Aid Trained Drivers

(CONTINUED FROM PAGE 22)

In case you are a little dubious and are probably thinking that the Hamm fleet is a little old two- or three-truck operation, let it be recorded that the

Hamm Brewing Co.'s St. Paul fleet is composed of 104 units and that there are 24 branches where 71 other trucks are in active service.

[Ed. note]

Paul Schuler has been in Hamm service for a long time and he has been particularly well trained for the double title he now enjoys—director of safety and director of transportation. He served 14 years in pharmacy; he had charge of St. Paul's first ambulance; he spent a year in the Navy hospital service during the war; he has been expertly and thoroughly trained in first aid work; he is well versed in medicine and surgery.

## New Truck Registrations by Makes by Months

		Autocar	Brockway	Chevrolet	Diamond T	Dodge	Federal	Ford	G. M. C.	International	Mack	Reo	Sterling	Stewart	Studebaker	White-Indiana	Miscellaneous	Total
January.....	1936	75	94	15,124	495	6,207	223	14,606	428	4,743	90	339	8	85	143	493	607	43,760
January.....	1935	71	86	9,867	550	5,141	152	13,260	858	3,513	114	380	10	42	127	308	280	34,759
February.....	1936	57	88	14,978	510	5,556	170	12,226	758	4,365	107	217	4	62	134	408	661	40,301
February.....	1935	41	54	11,701	499	3,271	113	14,330	570	3,174	63	292	10	34	107	217	321	34,797
March*.....	1936	87	121	19,332	627	6,669	199	15,969	1,533	5,314	177	256	17	73	221	466	756	51,817
March*.....	1935	55	66	13,607	528	4,216	130	16,603	827	3,620	97	377	14	60	135	252	407	40,994
Three Months†.....	1936	219	303	49,434	1,632	18,432	592	42,801	2,719	14,422	374	812	29	220	498	1,367	2,024	135,878
Three Months†.....	1935	167	206	35,175	1,577	12,628	395	44,193	2,255	10,307	274	1,049	34	136	369	777	1,008	110,550
% Change Three Months.....		+31	+47	+40	+3	+46	+50	-3	+21	+40	+36	-22	-15	+62	+35	+76	+102	+23

\* Does not include returns from Connecticut.

† Connecticut not included for March.



**YOU'RE PUTTING  
YOURSELF OUT...** if you don't get  
the full facts about

# Edison SPARK PLUGS



**...EDISON...** *a name known since the  
days of the first automobile...*

Edison is a time-honored name that everybody knows. Identified not with one success but with many it is associated in the minds of millions with praise-worthy, progressive developments of major importance. Do you fully appreciate the value of the name Edison as applied to spark plugs? If you do you'll get the full facts about Edison Spark Plugs and enjoy the service and savings so many other fleet owners now profit by.

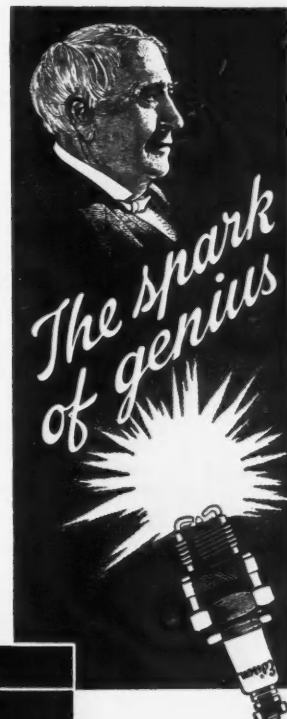
*Here's what one user says:*

"We have previously installed many

different types of plugs in one particular 20C motor used in a 10B6 which runs regularly from Baltimore to Florida, without success. Using an ordinary standard make spark plug, the truck would run only from 250 to 500 miles without trouble. However, since the Edison plugs were installed this same truck has run approximately 12,000 miles without any spark plug trouble whatsoever."

Don't put yourself out by failing to get the full facts about Edison Spark Plugs. Act today—and save every day!

EDISON-Splitdorf Corporation • West Orange, N. J.





## SHOP MECHANICS ARE FAITHFUL HANDS

(Continued from Page 17)

Mounted onto the end of the desk a large file holds service helps and data regarding every car in the fleet.

For example, let us open the file to No. 22, an Autocar, here we find a greasing chart, car instruction book, brake booster instruction book, cards for tires in use and a service record sheet. Another file is used for all tires—new, old, spares and stock.

When information comes our way regarding an accessory on one of our cars or the car itself we put it in this file. Then if we need information on a given subject, reference to the file shows instantly if we have it.

Suppose knee-action service information is needed for car No. 10, a Chevrolet. Open the file to No. 10, and there it is. You can't beat this silent professor for answering service questions.

**A** CHART, second in value to the service file, hangs near one of the air towers. It contains identification of every car under company care, tire sizes on the cars, and approved inflation pressures. It is drawn in five columns: our number, factory model and serial, engine number, tire sizes front and rear, air pressure.

For a truck with broken axle (away from the plant) you note the serial and motor numbers on the chart, pick up an axle at the agency and keep going, thus saving steps. If it's a tire, note the size on the chart before starting; no guess work about it; saves time.

For ordering parts for any truck, no matter where it is, we just take identifications off the chart. Listing for license plates too is more convenient—just copy it.

**A**VOID tool losses. Proper care of tools and shop equipment is no small part of operating profitably. Besides keeping them clean and orderly you want to know where things are if they are not in their places. As mentioned previously, our shop renders a dual ser-

vice—fleet and plant. The latter, often by outsiders or employees not connected with the shop.

After shorter hours were instituted and the business expanded, tool losses increased because some men left them where they were when they got through, forgot them, or carried them off.

To meet this angle a pad for listing items taken from the shop was set up near the stock room.

Listing is signed by the fellow receiving tools and scratched when tools are returned.

This has saved many steps and reduced losses to the absolute point of knowing what became of those missing. Tools and time saved is money earned. That's profit.

Terse notes cure driving weakness. Faulty driving should not be shielded. Bumping the curb when maneuvering

will snap off king pins; curb polishing scuffs tire side walls; clutch riding makes extra adjustments; running on a flat with a good spare in the rack is a crime; and all faulty driving contributes to undue wear on other parts.

For example: it costs \$12.50, labor included to renew king pins on a certain job. Which is better: inform the driver so that he can correct his bad ways or let him do it again? In every case a terse note on the subject stopped the trouble. The note idea seems far more effective than a private conversation with the driver.

The squawk sheet. We have reached the stage where trucks do not require daily repairs and driver contact with shop is much less than formerly. For this reason daily reports by drivers have been abolished and instead a shop job

(TURN TO PAGE 40, PLEASE)

GARAGE REPORT

F. 201

Ethyl Gas - A.M. \_\_\_\_\_

Purchased \_\_\_\_\_

Balance - P.M. \_\_\_\_\_

Used \_\_\_\_\_

Date \_\_\_\_\_

Meter Reading - A.M. \_\_\_\_\_

Purchased \_\_\_\_\_

Meter Reading - P.M. \_\_\_\_\_

Used \_\_\_\_\_

Car No.	Fore-man's Time Hours	Help-er Time Hours	Help-er Time Hours	Help-er Time Hours	Ethyl Gas	Gals. Gas	Qts. Oil	Lbs. Cup Grease	Lbs. Fibre Grease	Lbs. Trans. Grease	Water Check Only
1											
2											
3											
24											
25											
26											
71-4											
Cabinet											
Garage											
Plant											
Total											

MONTHLY CAR CHECK

Car #

General Greasing

Oil Springs

Drain Case

Water in Battery

Air in Tires

Speedometer End of Mo.

Date \_\_\_\_\_

1.						
2.						
3.						
4.						

Above left—The job-help file serves as the mechanics library. Above—some of the forms that simplify the keeping of garage reports and monthly service records



# HAULS 600 TONS DAILY



Truck being loaded at mine of Industrial Coal and Iron Co. in Southern Ohio

## COAL MINE TRUCK CARRIES 31-TON LOADS . . . NEVER TOUCHES PAVEMENT—TIRES TAKE IT

Six hundred tons of coal hauled is just a day's work for one of these big trucks. Five such semi-trailer units are constantly on the go. They're loaded in a hurry by big, powerful electric shovels. Then, after leaving the stripping operation, they drive through mud and water—over stones. They never see a paved road. And the gross load is over 31 tons. What a job for tires!

### Tires Triple Protected

Yet Triple Protected Silvertowns take the trucks through with never a let-down. Not one sidewall break is chalked up against

them in over a year!

It's that kind of service that leads truckers to choose Triple Protected Silvertowns for their toughest hauling jobs. And if they stand up under the brutal, grinding service of a strip mine, they'll save money on your trucks, too.

Here's the secret of Goodrich performance. Every Silvertown is built with a new invention in the sidewall. This development—Triple Protection—provides a 3-way safeguard against sidewall breaks—the cause of 80% of premature failures! When you get this protection, you've

gone a long way toward getting tire costs down to bed rock. Don't take

chances. Insist on Triple Protection when you buy. It costs you *nothing* extra.

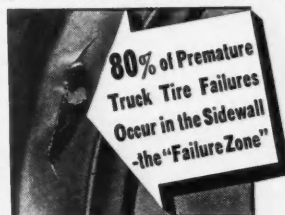
### HOW TRIPLE PROTECTION WORKS

**1 PLYFLEX**—a new, tough, sturdy rubber material with greater resistance to stretch. A layer of Plyflex in the sidewall prevents ply separation—distributes stresses—checks local weakness.

**2 PLY-LOCK**—the new Goodrich way of locking the plies about the bead. Anchoring them in place. Positive protection against

the short plies tearing loose above the bead.

**3 100% FULL-FLOATING CORD**—Each cord is surrounded by rubber. With ordinary cross-woven fabric, when the cords touch each other, they rub—get hot—break. In Silvertowns, there are no cross cords. No friction.



© 1936, The B. F. Goodrich Co., Akron, Ohio.

# Goodrich *Triple Protected* Silvertowns

SPECIFY THESE NEW SILVERTOWN TIRES FOR TRUCKS AND BUSES

JUNE, 1936

(CONTINUED FROM PAGE 38)

sheet is used. Drivers or anyone connected with the shop may write a job on this sheet. When completed a red line is passed through the job—uncompleted work is carried over in order of importance on the next day's job list.

Simple and effective—no mind reading notions about it—talking time is reduced—many otherwise idle moments are allocated to usefulness.

Now that we've listed a job let us compare the cost in our shop with the cost of the same job if sent out, and see what we make and when not to do the job.

A valve grind on one truck if sent out costs \$10.50. In our shop one man does the job in 6 hr. The difference is plain. Another truck has brakes re-lined outside for \$8.50 labor plus material. In our shop one man does the job in 5 hr. Complete motor over-haul is but a larger job.

Our advertising department needed some lugs welded onto 150 side-walk signs. The price outside was \$1 apiece, plus handling. We knocked 'em over in a week with our welding outfit. These are samples on the golden stairs to profit via the fleet shop.

With profit in sight there is still

room for failure unless work is divided. A simple, sure way to do this is to see that each man is occupied at least 5 hr. out of eight on pay-work. Five hours clears his keep—above that is profit for the shop. By pay-work I mean jobs that would cost you prices outside. One to two hours daily should be devoted to shop adjustment. Drills, jacks, wrenches, tool drawers, racks, light cords, errands for supplies, and various other items are just a few of the things to keep in mind if you would always be ready to service efficiently.

Profit that is not a direct return for shop service may come through a company customer. To illustrate: a customer hands a broken ice cream dipper to one of our drivers who brings it to us and we repair it. Next day on delivery the driver collects a cost charge. In this way the line of shop interests helps to hold customers.

LAST but not least watch the discount steps. Spark plugs, for instance, are offered in lots of 50 with a rather generous discount but appear to be much more costly when bought in smaller numbers.

Water hose, fan belts, battery wires, and any number of things carry good discount figures in certain lot sizes. But don't be tempted to buy in lot sizes unless you really have turn-over for the things you buy, for after all, investment in things not needed is a poor investment indeed.

Overtime work is a rarity with us mostly because our service arrangement really distributes and avoids bunching of work at any given period—saves men too.

So let us keep our dates with our trucks and our men and the records will show that we are Fidelia's Children—Faithful Hands.

#### White Display at Exposition

The largest display of trucks, tractors and buses ever exhibited in one show by one company will be on display by the White Motor Co. at the Great Lakes Exposition this summer. At least 25 types will be included.

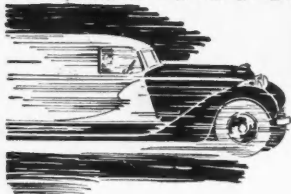
#### Campbell Promoted by Johns-Manville

George J. Campbell has been promoted to the position of fleet sales manager for the Johns-Manville Automotive Commodities Department.

#### Federal Receives Army Order

Federal Motor Truck Co. has received an order from the government for 278 trucks with cab, cargo bodies and special equipment. The order amounts to \$350,000 and brings the amount of government business received so far this year by Federal to 491 trucks valued to \$650,000.

## FAST ACCELERATION



## HEAVIER LOADS SMALLER GEARS

are just **THREE**  
of the reasons why

**"STURACO"** EXTREME PRESSURE ("E.P.")  
GEAR AND CHASSIS  
LUBRICANTS

are required for operating conditions of today,  
AND WHY after FOUR years of actual road service these top quality lubricants are becoming adopted by a steadily growing number of large motor fleets of outstanding reputation for economical maintenance.

Change to **"STURACO"**  
for 90 days and see the  
difference.

IT'S YOUR LOWEST COST  
INSURANCE POLICY!

**"STURACO" E.P. LUBRICANTS**  
ARE THE ORIGINAL DEVELOPMENT OF  
**D.A. STUART & CO.**  
ESTABLISHED 1865  
GENERAL OFFICES: 2727-2753 SO. TROY ST. CHICAGO, U.S.A.  
BRANCHES IN PRINCIPAL CITIES



THE **BIG THREE**  
OF MODERN LUBRICATION



# POWER

## FOR every transportation need



Here are pictured the "hearts" of the great GMC truck line — ten great engines graduated in size and in powerability to exactly meet the demands of modern transportation. Each power plant is correctly engineered for a specific capacity range to the end that truck owners—be they operators of vast fleets or of only one delivery vehicle—may look with confidence to GMC, commercial vehicle headquarters, for the kind of hauling equipment that assures maximum work and earnings. GMC prices start at \$425, chassis f.o.b. Pontiac. In every capacity range there is an unmatched value.



Time payments available through  
our own Y. M. A. C. 6% plan.

# General Motors Trucks and Trailers

GENERAL MOTORS TRUCK COMPANY • PONTIAC, MICHIGAN



## New Products On Parade

(CONTINUED FROM PAGE 32)

### Spicer Power Take-Off

SPICER MFG. CORP., Toledo, Ohio, announces a new Brown-Lipe two-speed power take-off, Model 001523. This unit can be assembled to any make or model truck including Ford, without interference with any part of the chassis.

This new model differs from other models in that it turns counter engine-wise instead of engine-wise. It is of the push rod type and is equipped with poppets and springs for holding gears in mesh. It is designed for either intermittent or con-

tinuous operation, with an output torque of approximately 140 ft. lb. and may be furnished with any pitch of gear to fit any transmission.

### "Semi"-Safety Device

DEVELOPMENT of a new automatic semi-trailer device known as the Mack Coincidental Safety Lock, is announced by Mack Trucks, Inc.

The entire action of the Coincidental Safety Lock is automatically controlled by the normal functioning of the support wheel mechanism.

Prime component of the new device is an auxiliary fifth wheel lock comprising two heavy locking pins working vertically

through holes in the upper fifth wheel plate. Except when the support wheels are fully down, these pins overlap the edge of the fifth wheel lower half, forming a secondary lock which effectively prevents accidental uncoupling even though the driver forgets to set the king-pin latch.

### Fleet-Delivery Tire

A NEW tire designed, engineered, and built specifically for city delivery operation where constant starting and stopping causes more rapid tread wear than in any other type of service, has been announced

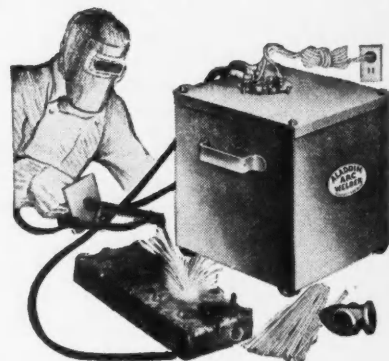


by the tire division of United States Rubber Products, Inc.

This new tire, the U. S. Royal Fleet-Delivery, is built of extra deep, flat contour tread of tough, tempered rubber which averages 32 per cent greater non-skid depth than standard dimension tires of corresponding size. Zigzag center grooves with sharp edged projections for gripping, and sharp edged cog-wheel shoulder blocks provide maximum traction.

### Arc Welder is \$29.50

Commonwealth Mfg. Corp., Cincinnati, has so simplified the construction of a new electric arc welder, called the "Aladdin,"



that it can be sold for only \$29.50, and can be operated from any ordinary light socket.

The "Aladdin" is a full-size, heavy-duty machine, weighing 100 lb., and is equipped with a variable resistance that permits its use to any heat within the limits of its capacity. Its maximum output is 80 amp. at 40 volts.

(TURN TO PAGE 44, PLEASE)

**GUARANTEED FOR *life!***

THE *butt weld* OF THE

**TIMKEN Tubular TRAILER AXLE**

- ▼ Let's get the straight of this—we guarantee for life the butt-weld which makes one integral powerful unit of a seamless tube center of tempered steel, and two spindles of forged alloy steel.
- ▼ It's the only one-piece trailer axle built.
- ▼ Spring seats are welded on—"for keeps"; and brake mounting flanges are welded on, or forged as parts of the spindles—also for keeps.
- ▼ Not a single part to get loose, or rattle, or fall off; WELD-BILT means "better built".
- ▼ It's the best trailer axle ever built; not just our opinion—we know.
- ▼ You'll save money when you recognize these simple facts; and specify Timken Tubular Trailer Axles.

*the world's largest axle builders*

**THE TIMKEN-DETROIT AXLE COMPANY**  
DETROIT, MICHIGAN

*YOU'RE likely to hear a statement like that whenever bus and truck men talk shop. For when any fleet cuts a hearty slice from its operating overhead—that sort of news gets about.*

**"WE CUT DOLLARS OFF OUR RUNNING COSTS  
OUR DIDN'T COST A CENT"**

**Y**OUR truck and bus motors can look good, hum like tops without major complaint . . . and still give your accounting department a headache. There are 16 parts of a motor that control combustion economy and operating efficiency. When they're right the motor turns up maximum mileage per gallon. When some of them are just a little wrong *nothing much happens except that you waste fuel.*

That's where Standard can turn a trick for you. Let the Standard Oil Company (Indiana) combustion engineers make a *free* combustion analysis of your fleet.

These trained engineers, using special instruments, check and measure every factor of power efficiency or loss in a gasoline engine. They recommend the slight adjustments needed to coordinate all sixteen factors for the engine's most efficient operation—that's all.

Hundreds of mid-west fleets have called in Standard's engineers, followed their recommendations and *have carved from 8 to 20% off their gasoline and oil expenses.*

Call your nearest Standard Oil (Indiana) office—ask for the free combustion analysis—and join the growing list of bus and truck operators who can prove that Standard Oil products cost less because they go farther.

**STANDARD OIL COMPANY (INDIANA)**  
910 SOUTH MICHIGAN AVENUE • CHICAGO, ILL.



**STANDARD OIL PRODUCTS:** ISO-VIS "D" • Standard Transmission Oil (Summer and Winter Grades) • Standard Heavy Duty Gear Grease • Standard Wheel Bearing Grease (Medium and Heavy) • Standard Fibre Greases (for Universals) • Standard Pressure Gun (Medium and Heavy) • Standard Water Pump Grease • Standard Steering Gear Lubricant.

Copyright 1936, Standard Oil Co.

**STANDARD OIL SERVICE**

(CONTINUED FROM PAGE 42)

### Filterpure Unit

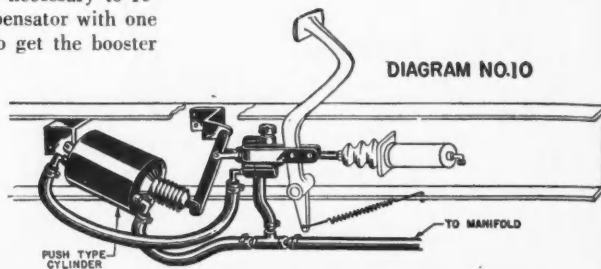
**FILTERPURE** is a self-contained unit which may be quickly installed in refrigerated trucks for purifying the air. A small motor in the unit forces all the air in the truck through a bed of activated carbon and air is thus completely purified as it circulates. The manufacturers claim its action maintains color and firmness of meats, lowers temperatures, eliminates taste transfer, stops sweating of cases, permits trucking of mixed fish and meat loads, etc. The unit is built of aluminum, weighs but 6 lb., is 20 in. long. Betz Corp., Hammond, Ind.

### Power Brake Hook-Up

THE Vacuum Power Equipment Co. offers a power unit which installs substantially as here illustrated. With this method of installation it is no longer necessary to replace the barrel type compensator with one of the box type in order to get the booster unit in place.

The sequence of operation is very simple indeed. When the pedal is depressed slightly the valve opens. This causes the power cylinder to

push open the lever which in turn exerts pressure upon the hydraulic plunger. The line pressure in the hydraulic system is "boosted" from two to three times over what is possible otherwise. There is prac-



tically no manual effort required on the part of the driver as the power cylinder does the work and the foot merely guides the valve opening.

### Wheel Balancer

THE Harley C. Loney Co., Detroit, Mich., is marketing a balancing stand that fastens to the wall, post or bench and will handle any type of automobile wheel. Features include two heavy-duty ball bear-



ings, with dust proof casings, balanced steel cones hardened and ground and a chrome plated gauge for checking wheel wobble and radial run out. This device indicates when a wheel is out of balance, and suitable weights can be added to correct the condition.

### Feralun Safety Tread

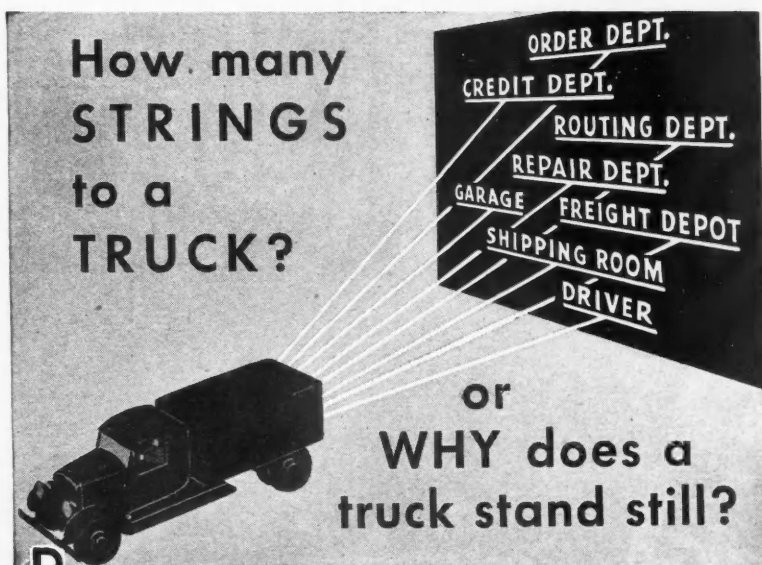
**FERALUN** is an anti-slip safety tread which eliminates slipping and tripping hazards. It is a cast iron metal matrix, in the surface of which, at the time of casting, hard, irregular abrasive grains are firmly imbedded by a patented process. These grains projecting slightly above the wearing surface, grip the shoe sole, preventing slipping. Trucks so equipped assure greater safety to the driver. American Abrasive Metals Co., Irvington, N. J.

### Chrome-Plated Pins and Pistons

THE Toledo Steel Products Co. has added a new line of pistons and chrome-plated pins to its line. The new line is factory duplicate type cast-iron and aluminum-alloy pistons, including the Invar strut type. They are featured in the new Toledo general catalog.

[Other Products Page 104]

COMMERCIAL CAR JOURNAL



**P**EOPLE used to think it was the driver—when they thought at all. Now they figure differently. And they are discovering a lot of interesting things. Among them this:

**Most of the idle time of a truck is due to other factors than the driver.**

Perhaps they make a little change in the order department, or some trifling change in office routine, and as a result several expensive trucks increase their running time an hour a day! . . . What starts them doing this? . . . When they find out when the delays occur, and for how long, then they can't help

going after the cause. . . The *Servis Recorder* automatically shows up all delays on a graphic chart—like pointing a finger at them.

Today more than 100,000 *Servis Recorders* are looking after more than 100,000 trucks, and those trucks are keeping busy. . . Have you investigated it yet?



Write for Bulletin!—Ten Ways of Getting More Work Out of Motor Trucks

**The Service Recorder Company**  
1422 Euclid Ave., Cleveland, O.

**The Servis Recorder**  
Tells Every Move Your Truck Makes



# FRUEHAUF Everywhere!

Leading the Fruehauf line of standard all-purpose Trailers is the new Type "F" Van. This unit combines strength, light weight, and streamlined appearance—at an unusually low price.



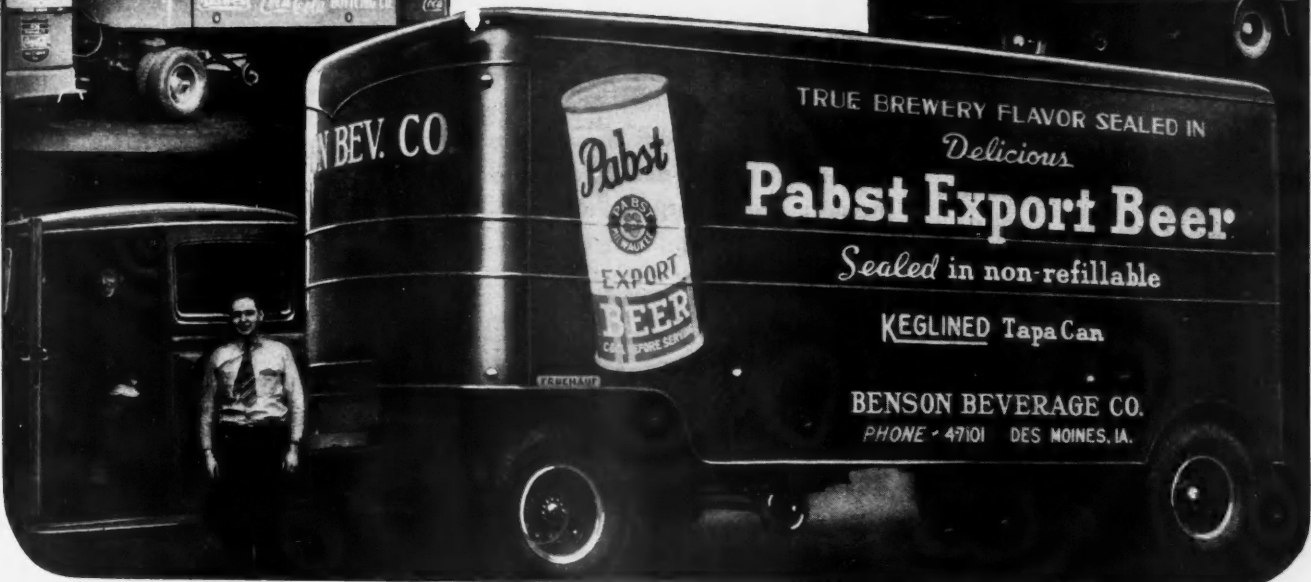
TODAY MEN ARE DEMANDING something more than low haulage cost. That "something" is *class*!

Take a look at any of the new Fruehaufs on the road—on city streets. You'll find Fruehauf Trailers have "class" that counts—appearance that attracts. Here is dollars-and-cents advertising value, modern, prestige-gaining style.

And, in a Fruehauf, body and chassis are built together. Streamlining is matched with engineering, capacity, and weight distribution. Net result: Fruehauf gives you peak performance, attractive appearance, and cost-cutting economy.

Oldest and Largest Manufacturers of Trailers

**FRUEHAUF TRAILER CO.**  
10957 Harper Ave. Detroit  
Sales and Service In All Principal Cities



## Expander Type Rings

(CONTINUED FROM PAGE 13)

was 60,000 miles, which is not surprising when you consider that trucks in all kinds of service are in this survey.

Conventional rings maintain adequate oil control for an average of 30,300 miles, the average being taken from the mileages given by 55 fleet operators as the useful life of conventional rings in new or reconditioned cylinders. The range of individual figures in this case was from 7500 miles to 80,000 miles. If these averages are a

fair index of piston ring performance they provide evidence that the expander type rings give about 2000 more miles of satisfactory life than do conventional rings when installed in new or reconditioned cylinders. This is near 6 2/3%.

If at this point an interpretation of these figures may be in order it may be pointed out that quite possibly the 20 fleet operators who install expander type rings in new or reconditioned cylinders do so to combat a chronic engine or operating condition that has been resulting in excessive oil consumption. If this be true and the 55 operators who use conventional rings in new and re-

conditioned cylinders are reporting on average conditions, then the expander type rings suffer from the previous comparison which would give them a larger advantage if the conditions were more nearly comparable. In partial support of this suggestion it may be argued that while the average mileage of the expander rings is higher than that of the conventional rings the highest individual mileage given is 60,000 miles while 80,000 miles is mentioned several times as the limit for conventional rings.

Passing on to the characteristic of expander rings and conventional rings in worn cylinders we find that expander type rings have an average satisfactory life of 19,300 miles when installed in worn cylinders. The lowest figure mentioned in connection with expander type ring life in a worn cylinder is 6000 miles and the highest is 50,000 miles. Fifty-four fleet operators contributed figures which make up the average.

The conventional ring shows a sharp drop in useful life when used in a worn cylinder. The figure is 12,800 miles and even this is an unfair comparison so far as the expander rings are concerned because three operators refused to give a useful life for conventional rings in a worn cylinder by simply saying "impractical to install conventional rings in a worn cylinder." While they would probably rate the useful life of a conventional ring in a worn cylinder very short, any figure that they gave would lower the average but since they gave no figure it was impossible to use their opinions in determining the average.

To determine just what use the fleet operators who do not install expander type rings in new or reconditioned cylinders make of them the questionnaire contained the question, "At what cylinder taper do you install expander type rings?" Two fleet operators answered by saying, "no standard—to stop oil pumping." Two more operators specified, "at first ring change."

It seems hard to believe but the range of wear which is given as the point when individual operators install expander type rings varies from .001 in. to .030 in. Eight operators indicate that they install expander type rings when the cylinder taper is over .010 in. which certainly puts piston rings to a test.

Omitting these eight operators from the computation the average wear point at which expander rings are installed is .0065 in. Thirty-two operators gave their individual practices in order for us to obtain this average. The wear point given most often is .006 in. which is the standard for nine operators. Ten one thousandths is a point at which five operators install expander rings and five favor it at .008 in.

In comparing the rate of cylinder

## A SAFETY FLEET



**MAJOR ACCIDENTS** are almost always the result of high, ungoverned speed.

To prevent such accidents, automotive transportation, to the extent of more than a million and a quarter vehicles, uses Handy Governors.

Records prove that Handy-Governed cars and trucks almost never **CAUSE** major accidents and are very seldom involved in them.

Since 1921, Handy Governors designed by A. A. Bull and manufactured under his direction as President of this Company, have been preventing major accidents, and promoting safe traffic on the highways of the world.

*This Company also manufactures the famous high-efficiency Handy Perfection Air Cleaner and the new Handy Oil Conditioner which keeps motor oil forever fresh.*

**HANDY GOVERNOR CORPORATION**  
DETROIT

**HANDY GOVERNORS**

EVERY FREIGHT HAULER KNOWS

# VALUE

goes deeper than price

It is a common error to confuse the words "price" and "value." Actually, "value" is what you get for the price you pay.

Ford believes "value," as applied to trucks and commercial cars, should be a combination of high quality at low price with superior performance at low cost . . . that it should include low operating cost, low-cost maintenance and long-lasting, brilliant performance. The experiences of truck and commercial car owners indicate that they agree with Ford's idea of value.

Further evidence comes from the cost records of owners. These records prove that V-8 Economy is OVER-ALL ECONOMY . . . that it includes savings in fuel and oil, tires, taxes, license

fees, insurance, interest, wages, depreciation, capital investment and repairs.

Ford V-8 Truck and Commercial Car "VALUE" goes deeper than price. True appreciation of V-8 Value comes only after tens of thousands of miles of reliable, economical service. But your Ford dealer invites you to "sample" V-8 Performance . . . a vital element of V-8 Value . . . under your own operating conditions. Call your Ford dealer today and set a date for an "on-the-job" test.

• • •

*Any new 112-inch wheelbase Ford V-8 Commercial Car can be purchased for \$25 a month, with usual low down-payment. Any new 131½-inch or 157-inch wheelbase Ford V-8 Truck can be purchased with the usual low down-payment on the new UCC ½% per month Finance Plans.*

## FORD V-8 TRUCKS

### AND COMMERCIAL CARS



(CONTINUED FROM PAGE 46)  
wear with expander type rings against conventional rings, 46 operators find that the expander type rings are responsible for the greater wear. Twenty-eight operators do not agree that the expander type ring causes any more wear than the conventional type.

The specific information dealing with how much greater wear was caused by the expander disclosed chiefly that operators do not know how much faster the wear is with expander type rings. Three operators ventured the opinion that 10 per cent was correct and two qualified their opinion by saying "slightly."

On no other rate of wear did any two operators agree.

Sixty operators have noticed a difference in engine performance when expander rings have been installed and only nine operators have not. Most of these comments record the difference as a favorable one. With each operator describing the difference with his individual expressions it would be hard to get the consensus from a quick reading so the various phrases have been reduced as faithfully as possible to a standard nomenclature which is more readily understandable. The number of mentions has nothing to do with the

number of fleet operators contributing since one fleet operator may describe several ways in which he notices the difference. These answers are: more power, 19; less oil consumption, 14; better ompression, 10; sluggish, 10; less gasoline consumption, 8; quieter engine, 7; smoother running engine, 7; better acceleration, 3; lower top speed, 3; overheating, 3; hard to break in, 3; loss of power, 2; better, 2; blow-by, 1; no blow-by, 1.

If all of the comments that might be construed as favorable are added the sum is 73 while the sum of the unfavorable comments is 20. In the face of this majority and the other results of this survey, there is only one conclusion to be drawn. Fleet operators believe that expander type piston rings are an economical and necessary part of fleet maintenance but while the favorable bloc is large, their views are not accepted by all fleet operators.

## AFTER HOURS

(CONTINUED FROM PAGE 24)

unable to give vital aid to engineers in keeping watch on signals. The facts brought out by E. E. Vail, fireman of the Pennsylvania's crack trains, the Broadway Limited and the Liberty Limited, were typical. Because the smoke is always on one side of the cab or the other, the fireman and engineer must depend on each other to catch signals. The fireman must interrupt his look-out over 1000 times, he said, because by actual count that is the number of times on a run that he must open the firedoor and stoke the boiler. Because of the blinding glare this activity further interferes with the fireman's efficiency as a lookout. G. C. Van Horn, "Big Four" fireman, described a test on a 133-mile run from Cleveland to Columbus, which proved that he was fire-blind more than 8 per cent of the time, yet on that run there are 74 signals and 175 crossings he is supposed to see.

This testimony, put into the Commission's record over repeated objections by railroad attorneys, certainly indicates that when accidents occur at grade-crossings the railroads cannot conscientiously wash their hands of the blood that is shed.

The true safety record of the railroads therefore is that, with all the highly touted automatic devices, 4889 persons were killed and 16,591 injured.

Which would make the cleverly-phrased, self-praising, highway transportation-smearing safety advertisement another typical instance of what, in the vernacular, has come to be designated by too-long-suffering highway interests as "a dirty, low-down, railroad trick."

# A better 2-SPEED AXLE

## ...TIMKEN

5.27 to 1

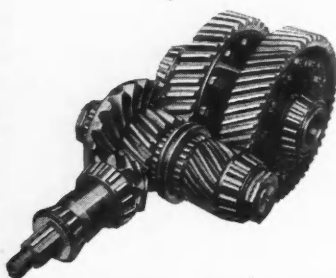


for speed

7.06 to 1



for GRADES



- ▼ a double-reduction drive; the kind of axle available before only in heavy duty, finest quality trucks selling up to \$5000
- ▼ full "man-sized" gears in both ratios; all the rugged strength and efficiency for which Wisconsin Double-Reduction Drive is famous
- ▼ only three additional working parts give you an extra ratio
- ▼ perfect accessibility—an easily removable carrier
- ▼ a sensible way to increase average vehicle speed, and cut operating costs
- ▼ a better 2-speed axle; the fine quality of design and workmanship you expect of Timken

the world's largest axle builder

THE TIMKEN-DETROIT AXLE COMPANY

DETROIT, MICHIGAN

WISCONSIN AXLE DIVISION

OSHKOSH, WISCONSIN

# TRUCK SPECIFICATIONS TABLE

## KEY TO ABBREVIATIONS AND REFERENCE MARKS

**Make and Model—Only basic models** are listed. Modifications are available from most manufacturers.

**Trunking Rating—**Where a spread of trunking ratings is given, the maximum ratings are for ideal operating conditions and the minimum for extremely difficult conditions; the ranges between are for varying operating conditions.

**Chassis Price—**Chassis price quoted applies to standard wheelfbase with standard tires. All prices are F.O.B.

[illegible]

(7) **Autocar**—Larger service brake area on rear axles are provided when tires of 24" size are supplied.

(8) **Chassis**—Price does not include auxiliary axle. Complete axle weight includes auxiliary axle, complete; area of brake lining and drum included. Price includes auxiliary rear axle. (9) **Models** intended for dump or tractor service only.

(10) **Le Moon**—Models 306, 408, 506 and 610 are available as cab-over-engine models.

(11) **Willys**—Price includes body and complete equipment, and is complete price at Toledo.

(12) **Frame**—Frame lengths may be selected within limits, to suit individual requirements at no additional cost.

**AKES—ALL**  
 1. LaF. American La France.  
 2. Bendix. BL—Brown-Lipe.  
 3. 30—Bendix front, Own rear.  
 4. W or Bu—Buick.  
 5. W—Bendix front, Westinghouse rear.  
 6. W or Col—Columbia.  
 7. Cat—Caterpillar Cl or Cla—Clark.  
 8. Co—Covert Con—Continental.  
 9. Cat—Caterpillar Cl or Cla—Clark.  
 10. Co—Covert Con—Continental.  
 11. Cat—Caterpillar Cl or Cla—Clark.  
 12. Co—Covert Con—Continental.  
 13. Cat—Caterpillar Cl or Cla—Clark.  
 14. Co—Covert Con—Continental.  
 15. Cat—Caterpillar Cl or Cla—Clark.  
 16. Co—Covert Con—Continental.  
 17. Cat—Caterpillar Cl or Cla—Clark.  
 18. Co—Covert Con—Continental.  
 19. Cat—Caterpillar Cl or Cla—Clark.  
 20. Co—Covert Con—Continental.

A La F—American La France.  
 B—Bendix. BU—Brown-Lips.  
 O—Orendix front. Own rear.  
 W or Bud—Buda.  
 W or Borg—Borg Warner.  
 W—Bendix front. Westinghouse rear.  
 or Col—Columbia.  
 Cat—Caterpillar. Cl or Cla—Clark.  
 or Covert—Covert.  
 C—Cotta Gear.  
 Cum—Cummins-Diesel.  
 O—Orendix front. O—Detroit Gear and Machine.  
 or Eaton—Eaton.  
 F—Fuller.  
 Her—Hercules.  
 L—Lockheed.

LW—Lockheed front, Wisconsin rear.  
 LY—Locking.  
 O or Ow—Own.  
 OP or Opt—Optional.  
 Shu—Shuter.  
 St or St—Selling.  
 T or Tm—Timber.  
 TW—Timken Wisconsin.  
 TW—Timken Wisconsin.  
 WQ—Warner Gear.  
 W—Hes—Waukesha Hesselman.  
 Wau—Waukesha.  
 W or Wis—Wisconsin.

**Location**

- 2—Two Wheels, rear only.
- 2-1/4—Two-wheel brakes effective on all four wheels through driveshaft.
- 4/6—Brakes on four rear wheels effective on all wheels through driveshaft.
- 4-1/4—Brake on transmission effective on all four wheels through driveshaft.
- 4—Four Wheels, front and rear.
- 4-1/4—Four Wheels, rear only.
- 5—Six Wheels, front and rear.
- 5-1/2—Jackknifing sheet.

**Type**  
—Internal.  
—External.  
**Operation**  
A—Air.  
D—Hydraulic and mechanical.  
H—Hydraulic.  
M—Mechanical.

**Location**

- 7—Center of double propeller shaft.
- 1—Rear wheels.
- 4—Four wheels.
- 2—Worm or bevel gearshaft.
- 5—Transmission.
- 6—Driveshaft.

**Type**  
 O—Tru-Stop disk.  
 I—Internal.  
 E—External.

**RAKE DRUMS**

**Material**  
 C—Cast alloy iron.  
 A—American Car Ferry.

1—Ermalte.  
2—Gunite.  
3—Hunt Spiller.  
4—Cast iron.  
5—Pressed steel.  
6—Pressed steel.  
7—Cast steel.

**Type**  
 C—"I" Beam.  
 T—Channel tapered front and rear.  
 L—Channel reinforced with liner.  
 B—Channel reinforced with both liner and naplate.  
 TL—Channel reinforced with plate.  
 TR—Channel tapered front and rear reinforced with liner.  
 D—Drop Center.  
 TT—Tapered front.

**GOVERNOR STANDARD**  
Y—Yes.  
N—No.

## REAR AXLE

### Final Drive and Type

B—Bored.
C—Chain.
D—Dead.
F—Full-floating.
2—Double Reduction.
3—Triple Reduction.
W—Spiral bevel.
W/2—Worm or Double Reduction
Optional.
1—Semi-floating.
2—Three-quarter floating.
3—Ratios other than standard at extra cost.
(***) Only one ratio.

**Drive and Torque**

A—Radius Rods and Torque Arm.  
 B—Radius Rod and Torque Tube  
 H—Hotchkiss, (springs)  
 R—Radius Rods  
 T—Torque Arm.  
 TT—Torque Tube.

22F—Forward unit of Rear Axle Group.  
23R—Rear Unit of Rear Axle Group.  
24R—Forward and rear units of Rear Axle Group.  
45F—Front Axle and Forward unit of Rear Axle Group.  
45FR—Front axle and rear unit of rear axle group.

**or Transportation Engineering)**  
Miles Per Hour  
R.P.M. x D.  
M.P.H. =  $\frac{336 \times \text{F.G.R.}}{\text{R.P.M.}}$   
M.P.H. = Miles per hour.  
R.P.M. = Revolutions per minute.  
D. = Effective tire diameter.  
F.G.R. = Final gear ratio.

GA = Grade ability.  
TE = Tractive effort.  
RR = Road resistance—.012 for hard surfaced roads.

	Tractive Effort
TE =	$\frac{\text{in. lb. torque} \times \text{F.G.R.} \times \text{EFF.}}{\text{G.V.W.} \times \text{R.}}$

EFF. = Efficiency—.90 for all rear axles except worm, then .85.

**Torque in LB. FT.**  
 Torque = 65 x cu. in. displacement.  
 (This is approximate and should be  
 used only when actual torque is not  
 known.)  
**Cu. in. Displacement**  
 $D = B \times B \times 7854 \times S \times \text{No. of Cyl.}$

**AMA Horsepower Rating**  
 $B \times B \times \text{No. of Cyl.}$   
**AMA H.P.** =  $\frac{2.5}{D \times B \times \text{Cyl. stroke}}$   
 D = Cu. in. displacement.  
 B = Cylinder bore.  
 Cyl. stroke =

### TIRE TABLE

Balloon Tires		Capacity	
Size	Capacity	Size	Capacity
30/20	1225	9.75/15	3175
30/20	1400	9.75/18	3600
30/20	1500	9.75/20	3900
30/20	1700	9.75/22	4200
30/20	1900	10.50/20	4700
30/20	1950	10.50/22	5000
30/18	2025	10.50/24	5200
30/18	2200	10.50/26	5450
30/24	2500	11.25/20	6150
30/20	2550	11.25/22	6350
30/20	2650	11.25/24	6550
30/25	2850	12.00/20	6250
30/25	3025	12.00/22	6950
30/15	2650	12.75/20	7200
30/20	3050	12.75/22	7500
30/20	3250	12.75/24	8200
30/24	3500	13.50/20	9100
30/24	3550	13.50/24	

High Pressure Tires	
0x5	1700
4x8	1950
2x6	1950
4-ply	2200
2x6	2500
10-ply	2500
6x8	2550
2x7	2550
34x7	2800
38x7	3200
36x8	3600
40x8	4000
38x9	4500
42x9	5000
40x10	5500
44x10	6000



Line Number	MAKE AND MODEL	GENERAL (See Keynote)				ENGINE DETAILS				TRANS-MISSION		REAR AXLE		FRONT AXLE	BRAKES				FRAME															
		Tonnage Rating	Chassis Price	Standard Wheelbase	Gross Vehicle Weight with Max. Tires	Chassis Wt. (Stripped)	Standard Rear and Front Tire Size	Dual rear S-single rear	Max. Tire Size	Model	No. of Cylinders	Stroke	Displacement	Comp. Ratio	H.P. at R.P.M.	Given	Number, Diameter, Main Bearings	Governor Standard	Make and Model	Forward Spd's	Model	Make and Model	Gear and Type	Drive & Torque	Range in High	Make and Model	Location Type	Area	Drum	Drum Material	Service Location	C-A Dimension (Std. W. B.)	Side Rail Dimensions	Type
1	Armstrong	11H 1 1/2-2 1/2	1295	156	195	11500	8.25/20	7.00/20	7.00/20	Con 20C	6-3 1/2 x 4 1/2	3 1/2	241.5	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	254	380	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
2	Armstrong	21H 2 1/2-3 1/2	2185	160	207	15500	8.25/20	7.00/20	7.00/20	Con 20C	6-3 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	312	527	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
3	Armstrong	31H 3 1/2-4 1/2	2695	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
4	Armstrong	41H 4 1/2-5 1/2	3205	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
5	Armstrong	51H 5 1/2-6 1/2	3715	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
6	Armstrong	61H 6 1/2-7 1/2	4225	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
7	Armstrong	71H 7 1/2-8 1/2	4735	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
8	Armstrong	81H 8 1/2-9 1/2	5245	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
9	Armstrong	91H 9 1/2-10 1/2	5755	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
10	Armstrong	101H 10 1/2-11 1/2	6265	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
11	Armstrong	111H 11 1/2-12 1/2	6775	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
12	Armstrong	121H 12 1/2-13 1/2	7285	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
13	Armstrong	131H 13 1/2-14 1/2	7795	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
14	Armstrong	141H 14 1/2-15 1/2	8305	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
15	Armstrong	151H 15 1/2-16 1/2	8815	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
16	Armstrong	161H 16 1/2-17 1/2	9325	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
17	Armstrong	171H 17 1/2-18 1/2	9835	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
18	Armstrong	181H 18 1/2-19 1/2	10345	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
19	Armstrong	191H 19 1/2-20 1/2	10855	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
20	Armstrong	201H 20 1/2-21 1/2	11365	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
21	Armstrong	211H 21 1/2-22 1/2	11875	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
22	Armstrong	221H 22 1/2-23 1/2	12385	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
23	Armstrong	231H 23 1/2-24 1/2	12895	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
24	Armstrong	241H 24 1/2-25 1/2	13405	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
25	Armstrong	251H 25 1/2-26 1/2	13915	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
26	Armstrong	261H 26 1/2-27 1/2	14425	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
27	Armstrong	271H 27 1/2-28 1/2	14935	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
28	Armstrong	281H 28 1/2-29 1/2	15445	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
29	Armstrong	291H 29 1/2-30 1/2	15955	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
30	Armstrong	301H 30 1/2-31 1/2	16465	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
31	Armstrong	311H 31 1/2-32 1/2	16975	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
32	Armstrong	321H 32 1/2-33 1/2	17485	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
33	Armstrong	331H 33 1/2-34 1/2	17995	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x 4 1/2	3 1/2	333.4	9.150	76-2800	7-2 1/2 x 10 1/2	N BL 35	Y BL 35	Tim	4	Tim	BF	BF	H 6-9-5.14	Tim	LAIH	LAIH	342	578	G	TX	10 1/2 x 3 1/2	6 1/2 x 3 1/2	d
34	Armstrong	341H 34 1/2-35 1/2	18505	146	233	16500	9.00/20	7.00/20	7.00/20	Her WXC	6-4 1/2 x																							



Rear 32 x 6.

Line Number	MAKE AND MODEL	Tonnage Rating	Chassis Price	Standard Wheelbase	Max. Wt. Gross Vehicle	Chassis Wt.	D-swing rear	Maximum Front and Rear	Model	No. of Cylinders	Stroke	Displacement	Comp. Ratio	Torque lb. ft.	H.P. at R.P.M.	Main Bearings	Governor Standard	MISSION		REAR AXLE		FRONT AXLE	BRAKES		PRAMB		
																		Model	Make and Model	Forward Spd's	Make and Model		Gear and Type	Range in High		Make and Model	Hand Location
1	Federal	370RA	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
2	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
3	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
4	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
5	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
6	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
7	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
8	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
9	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
10	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
11	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
12	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
13	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
14	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
15	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
16	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
17	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
18	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
19	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
20	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
21	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
22	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
23	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
24	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
25	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
26	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
27	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
28	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
29	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
30	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
31	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
32	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
33	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
34	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
35	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
36	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
37	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
38	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
39	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
40	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
41	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
42	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
43	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
44	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
45	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
46	Federal	370D	5-6	182	200	20000	10.50/20	10.50/20	Wau 6125	6-3x3x5	4.375	462	5.9	324	125-2000	7-3x13x5	Y	Y	4	4	WF	R 102-9.2	Tim 35000H	LAIHV	663	768	7x3x3x5
47	Federal	370D	5-6	182	200																						









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Line Number	MAKE AND MODEL	GENERAL (See Keynote)				TIRE SIZES		ENGINE DETAILS						TRANSMISSION		REAR AXLE		FRONT AXLE		BRAKES				FRAME										
		Chassis Price	Max. W.B.	Gross Vehicle Weight with Max. Tires	(Stripped) Chassis Wt.	Standard Rear and Front	Dual rear S-tires	Maximum Tire Size	Furnished	Max. Stroke	No. of Cylinders	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M.	Main Bearings	Governor Standard	Make and Model	Forward Spd's	Make and Model	Clear and Type	Drive & Torque	Clear Ratio	Range in High	Make and Model	Location	Operat'n	Lining	Drum Area	Drum Material	Hand Location	C-A Dimension (Std. W.B.)	Side Rail Dimensions	Type
1	Coleman	3800	130	144	12800	7200	9.00/24	9.00/24	Bud K393	6-4	3 1/2	393	4.9	260	100-2600	7-38 1/2	Y	Fu RU 16	4	2F	H 5.14-8.0	W 5 F30B8	67 1/2	7 1/2 x 2 1/2	W24IM	440	476	D	476	D	TD	78	10 1/2 x 1 1/2	B
2	Coleman	5300	130	180	12500	8000	9.00/24	9.00/24	Bud K428	6-4	3 1/2	428	4.9	260	100-2600	7-38 1/2	Y	Fu RU 16	4	2F	H 5.14-8.0	W 5 F30B8	67 1/2	7 1/2 x 2 1/2	W24IM	440	476	D	476	D	TD	78	10 1/2 x 1 1/2	B
3	Coleman	5600	130	180	12500	8000	9.00/24	9.00/24	Bud K428	6-4	3 1/2	428	4.9	260	100-2600	7-38 1/2	Y	Fu RU 16	4	2F	H 5.14-8.0	W 5 F30B8	67 1/2	7 1/2 x 2 1/2	W24IM	440	476	D	476	D	TD	78	10 1/2 x 1 1/2	B
4	Coleman	6100	130	180	12500	8000	9.00/24	9.00/24	Bud K428	6-4	3 1/2	428	4.9	260	100-2600	7-38 1/2	Y	Fu RU 16	4	2F	H 5.14-8.0	W 5 F30B8	67 1/2	7 1/2 x 2 1/2	W24IM	440	476	D	476	D	TD	78	10 1/2 x 1 1/2	B
5	Coleman	7200	144	180	12500	10600	11.25/24	11.25/24	Bud L525	6-4	3 1/2	525	4.9	260	100-2600	7-38 1/2	Y	Fu RU 16	4	2F	H 5.14-8.0	W 5 F30B8	67 1/2	7 1/2 x 2 1/2	W24IM	440	476	D	476	D	TD	78	10 1/2 x 1 1/2	B
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16	Coleman	7200	144	180	12500	10600	11.25/24	11.25/24	Bud L525	6-4	3 1/2	525	4.9	260	100-2600	7-38 1/2	Y	Fu RU 16	4	2F	H 5.14-8.0	W 5 F30B8	67 1/2	7 1/2 x 2 1/2	W24IM	440	476	D	476	D	TD	78	10 1/2 x 1 1/2	B
17	Coleman	7200	144	180	12500	10600	11.25/24	11.25/24	Bud L525	6-4	3 1/2	525	4.9	260	100-2600	7-38 1/2	Y	Fu RU 16	4	2F	H 5.14-8.0	W 5 F30B8	67 1/2	7 1/2 x 2 1/2	W24IM	440	476	D	476	D	TD	78	10 1/2 x 1 1/2	B
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21	Coleman	7200	144	180	12500	10600	11.25/24	11.25/24	Bud L525	6-4	3 1/2	525	4.9	260	100-2600	7-38 1/2	Y	Fu RU 16	4	2F	H 5.14-8.0	W 5 F30B8	67 1/2	7 1/2 x 2 1/2	W24IM	440	476	D	476	D	TD	78	10 1/2 x 1 1/2	B
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24	Coleman	7200	144	180	12500	10600	11.25/24	11.25/24	Bud L525	6-4	3 1/2	525	4.9	260	100-2600	7-38 1/2	Y	Fu RU 16	4	2F	H 5.14-8.0	W 5 F30B8	67 1/2	7 1/2 x 2 1/2	W24IM	440	476	D	476	D	TD	78	10 1/2 x 1 1/2	B
25	Coleman	7200	144	180	12500	10600	11.25/24	11.25/24	Bud L525	6-4	3 1/2	525	4.9	260	100-2600	7-38 1/2	Y	Fu RU 16	4	2F	H 5.14-8.0	W 5 F30B8	67 1/2	7 1/2 x 2 1/2	W24IM	440	476	D	476	D	TD	78	10 1/2 x 1 1/2	B
26	Coleman	7200	144	180	12500	10600	11.25/24	11.25/24	Bud L525	6-4	3 1/2	525	4.9	260	100-2600	7-38 1/2	Y	Fu RU 16	4	2F	H 5.14-8.0	W 5 F30B8	67 1/2	7 1/2 x 2 1/2	W24IM	440	476	D	476	D	TD	78	10 1/2 x 1 1/2	B
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30	Coleman	7200	144	180	12500	10600	11.25/24	11.25/24	Bud L525	6-4	3 1/2	525	4.9	260	100-2600	7-38 1/2	Y	Fu RU 16	4	2F	H 5.14-8.0	W 5 F30B8	67 1/2											



## Six-Wheelers

[illegible]

† Denotes New Models or Change in Specifications.

[illegible]

† Denotes New Models or Change in Specifications.

**Editor's Note:** The following White models were received too late for classification.

White	720A	5-7½	8600	9.75/20D	10.50/22	Own 396	6-4x5½	Y	Own 36B	5 Own 29C	2F	R 7.22-8.73	Own 24D	560	8½x3½	TF
	722A	8-10	9800	10.50/20D	11.25/24	Own 460	6-4½x5½	Y	Own 36B	5 Own 21C	2F	R 6.67-9.39	Own 9D	632	8½x3½	TF
											2F			632	8½x3½	TF

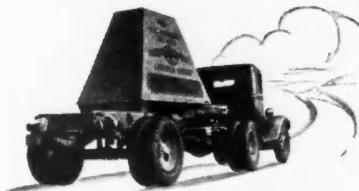


# Trucks or Delivery Units . . . Fleet Owners select **CHEVROLET** for Power and Economy

"Our average cost ran a trifle in excess of 3.6c per mile, including depreciation on a 3½-year basis, licenses, insurance, storage, washing and the ordinary operating expenses."



**CHEVROLET TRUCKS**  
prove stamina and record-breaking economy in amazing coast-to-coast run



Look at this great record

Location of Test . . . Los Angeles to New York  
Distance Traveled . . . 3511.5 miles  
Running Time . . . 129 hours, 24 minutes  
Average Speed . . . 27.14 miles per hour  
Gasoline Used . . . 308.6 gallons  
Gasoline, miles per gallon . . . 11.378  
Oil Consumption . . . 2 quarts  
Cost of Fuel . . . \$57.59  
Cost of Oil . . . \$6.67  
Fuel and Oil (cost per mile) . . . \$.016  
Average cost per ton mile . . . \$.00328  
Water Consumption . . . 1 gallon  
No mechanical failures

Entire test conducted under supervision  
of A. A. A. Contest Board—  
Sanction No. 3300.



FOR ECONOMICAL TRANSPORTATION

THE CHARLES E. HIRES CO., nationally prominent manufacturers of famous Hires Root Beer, provides another example of how fleet users have recognized the outstanding economy and the great and dependable power of Chevrolet trucks and delivery units. Quoting from a statement made by this company:

*"We selected the Chevrolet Sedan Delivery because it was economical in operating cost, provided ample room for carrying dealer display advertising and samples of our products, and afforded a desirable source of advertising."*

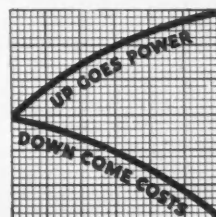
*"In addition to the Sedan Delivery cars (59), we have ten half-ton Panel trucks and six 1½-ton trucks for delivery work—a total of 75 Chevrolet units in our fleet."*

*"Our average cost ran a trifle in excess of 3.6c per mile, including depreciation on a 3½-year basis, licenses, insurance, storage, washing and the ordinary operating expenses."*

Chevrolet trucks are the world's *thriftiest high-powered trucks*—as fleet owners the country over are discovering! So, if you haven't already done so, get the facts on how powerful, dependable and economical 1936 Chevrolet trucks can reduce your haulage and delivery costs. Your Chevrolet dealer will co-operate with a demonstration—on your jobs!

CHEVROLET MOTOR COMPANY, DETROIT, MICHIGAN

GENERAL MOTORS INSTALLMENT PLAN—  
MONTHLY PAYMENTS TO SUIT YOUR PURSE



# CHEVROLET TRUCKS

JUNE, 1936



## Value of Vulcanizing Is In the Method

(CONTINUED FROM PAGE 19)

such a repair job. I placed a cavity in the rubber plug. This cavity allows the plug to flex readily with the casing without undue stress, thus eliminating the possibility of separation with its destructive effects. It proved so successful that I secured a patent on the process. As soon as I found out that it worked satisfactorily, I went back to my original theory of promptly repairing all cuts of any size.

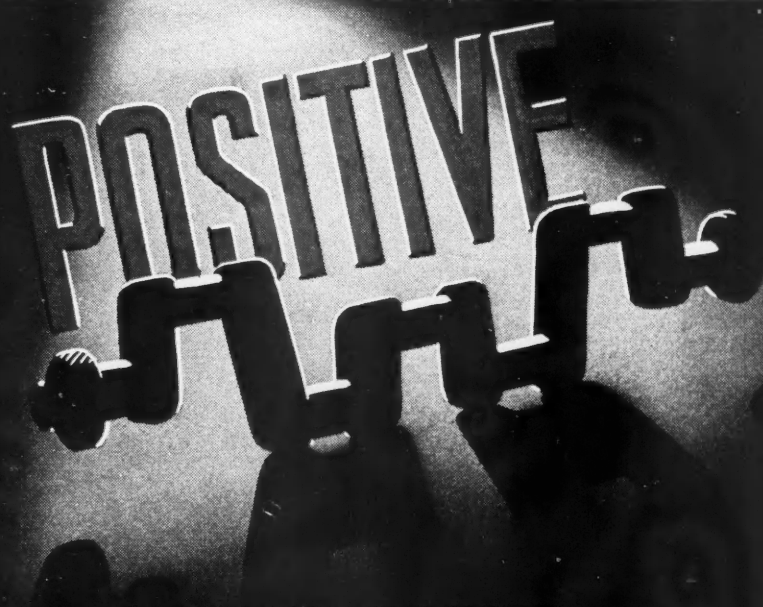
Here is my explanation of this repair job in detail. By "plug" I mean the rubber filler which replaces that portion of the tire which of necessity must be removed in order to put in a section job. Referring to the drawing, Fig. 1 is a fragmentary view of a tire looking at the outside of the tread showing a spot (1) which is a repair with a cavity (2) in the center. Fig. 2 is a view in transverse section of a tire taken on the line "ab" Fig. 1 showing a repair (1) with a cavity (2) in it. Fig. 3 is a matrix or die used for moulding the cavity in the repair job.

To repair a tire, we cut out the injured portion of the tire removing the thread for a distance of about one-quarter inch beyond the extremities of the injured portion of the carcass, or cords, making the resultant cavity in the tread and carcass as symmetrical as possible, the sides of the cavity having about a 60 deg. angle. The breaker strip is then removed as shown at (6). The broken ends of the cords of the carcass (4) are then trimmed as shown at (3) cutting as few cords as possible and going no deeper into the carcass (4) than is necessary to remove all discoloration of the cords caused by water and dirt. The cut surfaces are then thoroughly roughened with a power driven roughening tool of my own design and given two coats of cement. Fewer cords are cut by this method than by any other which is in itself a decided advantage.

You will note that the 60 deg. angle of the cavity in the tread (5) changes to perpendicular at (7) slightly below the tread design. The reason is, that if the 60 deg. angle cut was continued to the surface of the tread it would leave a thin edge on the replaced spot exposed to the road surface which is apt to scuff up and allow sand to work in loosening up the spot and causing it to peel out, also the step thus formed leaves more surface for the new rubber to adhere to and breaks up the traction wave.

To build up the repair, the hole or cavity (3) in the carcass is first lined with cushion gum the thickness of the breaker strip as shown at (8). The cavity (1) is then filled with tread gum. A cavity (2) is cut out of the tread gum (1) and the matrix (9), which is preferably made of aluminum, is fitted into it. The cavity formed by the matrix (9) extends as far down through the tread and carcass as possible without exposing the cords. The matrix (9) is designed to leave a cavity which flexes readily and yet leaves as much tread surface as possible and also eject gravel. It may be of any design suitable to the job at hand. The inside of the carcass (4) is reinforced with either a factory made crosspatch or a built-in crosspatch of raw cords as shown at (1). The above method of repairing truck tires has proven exceptionally satisfactory for several years in actual service on our motor freight lines where accurate records of each tire have been kept.

The repair may be cured in any approved manner, although, we secure the best results by curing the spot on a spot press before the reinforcement is built in, except cases where but a four or six-ply factory built crosspatch is sufficient, in which case the patch is




... LUBRICATION FOR "SHOCK POINTS"


Due to the microscopic fineness of "dag" colloidal graphite, it readily flows with the oil to main and connecting rod bearings forming a positive, self-lubricating surface on all the "shock points". \* \* This graphoid surface greatly helps to hold the oil in place. \* \* It also functions as a dry lubricant, should a forgetful driver allow his oil level to go below the danger point. \* \* These valuable characteristics of lubricants containing "dag" colloidal graphite go a long way toward assuring extra protection for automotive engines.

Ask your oil supplier about his colloidal-graphited brands today.

ACHESON COLLOIDS CORPORATION  
PORT HURON MICHIGAN  
Founded (1908) as Acheson Oildag Company



REG. U.S. PAT. OFF.



A photograph of electron diffraction pattern which identifies a graphoid surface on cast iron.

© 1936, A.C.C.

# COLLOIDAL GRAPHITE

ACHESON COLLOIDS CORP.  
PORT HURON, MICH.  
PLEASE SEND GRATIS STORY ON "DAG" COLLOIDAL GRAPHITE.

NAME .....  
ADDRESS .....  
CITY ..... STATE .....

# WHITE MAKES BIGGEST SALES GAIN IN THE INDUSTRY!

*White and Indiana first quarter registrations\* are up 76%  
over first quarter 1935 while industry gains only 23%*

**YES**—White is going to town! First quarter registrations just released, show the big swing in 1936 is to the completely modernized White Line.

While the industry as a whole showed a 23% gain in registrations for the first quarter of 1936 over the same period last year, White and Indiana registrations gained 76%—more than three times the industry's average! In March, White and Indiana registrations were up 85% over March, 1935, while the industry gained only 26.5%. White's March business was greater than any single month since March, 1927.

Operators are investing their dollars in White equipment because today's complete White Line has everything truck buyers want and must have for profitable transportation.

Modernized inside and out—streamlined—styled to the last minute by Count Alexis de Sakhnoffsky—the new Whites offer unusual advertising value. Beneath their streamlined exteriors, the new Whites have that superior *White Quality*, all through the truck, that makes for money-earning miles.

Many of America's foremost names in transportation are replacing their entire fleets with Whites. The records show that where operators buy one or two new Whites, repeat orders quickly follow.

For power, performance, economy, long life, prestige building appearance—in every price and capacity range—you can find no truck that will compare with a White.

*Investigate today's White values! Telephone the nearest White Branch or Dealer or write*

**THE WHITE MOTOR COMPANY, Cleveland**

\*R. L. Polk & Co. Figures (Conn. not available)

## *White* TRUCKS

(CONTINUED FROM PAGE 66)  
cured-in with the spot. We use an electrically heated sand bag for pressure and internal heat. This saves considerable time and expense. The reinforcement, of eight or more plies, is built in later and cured on an arm. We have to resort to the cavity mould for exceptionally large jobs.

So successful was this treatment of tires that the management soon observed that many more new tires, in comparison, were put in service on the southern division than on the northern. A survey of the southern division was

made. In this inspection tour we found the tires in a deplorable condition. There were new tires mated with worn out ones, tires ready to blow out on the trucks and new ones on the trailers, many with large pieces of crushed rock imbedded in them and none up to proper inflation. The tire inspection trip became a monthly routine as a result and the original set-up was expanded.

My first concern was to enlist the aid of the drivers and service men and teach them to be tire minded. Most of them at first thought it was a lot of bother and foolishness, but they soon

learned that by keeping the tires properly inflated and mated up that fewer changes on the road were necessary.

The service men along the line begin to remove the tires as soon as they receive the repair list and send them in to the tire shop for repair. The vulcanizer, upon receiving the tires, removes the tubes and thoroughly inspects the carcass. He then makes the necessary repairs. Most of the curing, including four and six-ply reinforcements, are done on spot presses. Repairs requiring eight or more plies of reinforcement are cured either on an arm or in a cavity mould. For reinforcements of four and six-ply, we use semi-cured ready built up crosspatches. We do not as a rule bother with small cuts which extend only to the breaker unless tread separation has started. If a cut goes through the breaker and four or more plies of cords, we reinforce with a cross patch of a corresponding number of plies, unless the cut goes entirely through the tire. We limit the reinforcement to two less than the number in the carcass. That is, if the tire is 12-ply, we put but 10-ply in. That tends to lessen pounding. In exceptionally large repairs where the hole through the carcass is four or more inches in diameter, we sometimes add a six-ply boot.

If a tire is worn smooth and is not too badly cut up with crushed rock, we recap it and put it back in service on the drive wheels of the three-axle trucks. When the recap is worn to the original tread again, they are transferred to the trailers. As yet, we have had no recapped tires wear completely out, so cannot give any definite figures as to the average mileage, but I do know that a recap will add at least 25,000 more miles to the tire. At first we recapped only the more perfect tires and as recapping proved successful, we became over confident and recapped several tires in which there were section jobs, but a half dozen of the section jobs blew out within 6000 miles. It had me guessing for a while, but I finally devised a way to put the cavity through the recap and our trouble was eliminated.

I believe any truck operator will find it well worth his time to make a scientific study of tire maintenance. A tire saved is equal to an extra pay load hauled.

#### Chevrolet Has Record Sales

Chevrolet car and truck sales in April totaled 134,431 units, setting a new all-time mark for any single month in the company's history. Sales for the year to May 1, totaling 406,620, a new all-time record for the first four months of a year.

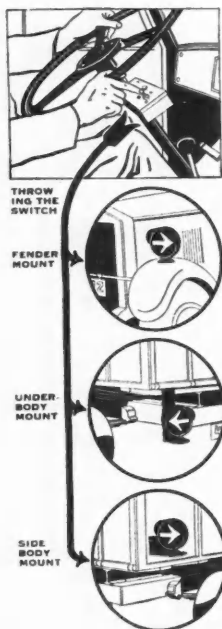


## A Signal So GOOD That It Meets Most Exacting State Laws

**FIRST Signal To Be APPROVED  
As Meeting Massachusetts'  
New Requirements**

### DIETZ "PILOT" DIRECTION SIGNAL

The Type of Signal That Eventually Will Be  
Required In Many States. The SAFEST Now.



**D** IETZ No. 350 "Pilot" Direction Signal employs 4 Detached Arrow Lites—located at the four corner extremities of the vehicle—eliminating uncertainty for both approaching and following traffic.

The Lites are operated through a Control Box, which attaches to the steering column just below the wheel—reached by the driver's fingers without removing hands from wheel. The Control Box contains Pilot Light, Switch, Fuse and Relay.

The Complete Assembly of the Control Box at the factory saves hours of usual installation time for a signal system—a big item in large fleets.

Sets with Two-Way Lites for front mounting or with Flanged Lite Units for Bus rear flush mounting are obtainable to meet requirements of the Massachusetts Law on certain types of trucks or buses.

Sets for Trailers have additional equipment consisting of a Hencol Heavy Duty Trailer Connection, with extra 56 ft. coil of wire.

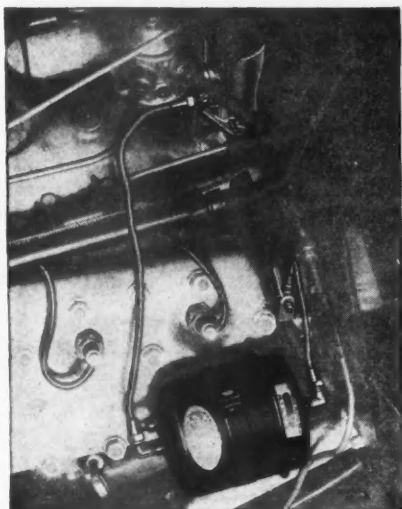
Consult Your Dealer or Write for Details and Prices. Our General Catalog of Motor Lites and Accessories may also prove useful.

**R. E. DIETZ COMPANY, NEW YORK**  
**PIONEER MAKERS OF VEHICLE LAMPS, FOUNDED 1840**

HEAD LIGHTS • TAIL LIGHTS • MARKER LIGHTS • DITCH, FOG & SPOT LIGHTS • DIRECTION SIGNALS  
TRUCK FLARES • REAR VISION MIRRORS • FLOOD LIGHTS • CATAPHOTE REFLECTORS • FIRE EXTINGUISHERS



## A FURTHER ECONOMY



We are pleased to advise that the volume developed by the demand for Purolator Oil Filters . . . especially engineered for Ford V-8s . . . has brought about a substantial saving in manufacturing cost. We are passing this on to the fleet owner, who can now buy *Genuine Purolators with all the attachments*, at a price of

**\$3.25 each**

If any doubt still exists in your mind concerning the efficiency and economy of Purolator protection, examine your oil after a thousand miles of driving . . . with and without a Purolator. Then you'll be convinced. Motor Improvements, Inc., Newark, New Jersey, makers of

# PUROLATOR

The Oil Filter

LICENSED UNDER SWEETLAND PATENTS

## Keeping Up With Keeshin

(CONTINUED FROM PAGE 25)

miles which it serves. Of its equipment there have been many estimates made, most of them gross exaggerations. Mr. Keeshin places the number at 1,500 units. But according to the tonnage being contracted for 500 more could readily be pressed into service.

The statement that these figures stand for today but will all be doubled inside of two years is not a writer's idle guess. It is given with authority from the front office.

Right now the parent Keeshin organization is thinking seriously about centralizing its terminal facilities. The construction of what is to be the world's largest motor freight terminal was recently announced. It will cost in excess of half a million dollars. Another terminal is now under construction in New York City, not as big as the Chicago unit but bigger than anything else servicing one line. Branch managers at half a dozen important points are reporting over-crowded conditions, so the next two years may expect to see a dozen new depots being constructed.

You may have read details of the

Chicago terminal, but for the benefit of those who have not, we will repeat the facts here. The Chicago terminal will be 1,000 ft. in length by 300 ft. in width. The platforms will be under cover. There will be two loading platforms, facing each other 110 ft. apart, with facilities for handling 268 trucks and trailers at one time. Today Keeshin trucks load from five depots in Chicago. One wing of the new building, 190 ft. by 116 ft. and three stories in height, will be given over to offices.

Other features will be a completely equipped shop for repairs and maintenance, and recreation and sleeping rooms and showers are to be provided for drivers. Apart from, but immediately adjacent to, the main building will be a gas station equipped with greasing pits. Gasoline and oil will be brought to this station in tank cars.

The site of the terminal will be at Roosevelt Road and South Clark street, extending south. This is almost in the heart of the freight yards of five of the leading trunk lines serving Chicago—the Baltimore and Ohio, Rock Island Lines, New York Central, Chicago Great Western, and Chicago and Alton.

**P**ROXIMITY of the site to railroad freight activity, and the contacts which Keeshin has made with rail lines for coordinated rail-truck service and his contracts for pickup and delivery to the railroads, have combined to give rise to stories that certain railroad capital was being invested in the organization. These stories Mr. Keeshin spikes with emphatic denials.

"There is not one dollar of railroad money interested in this system," he says. "We organized the company to establish an organization to serve the shipping public through the flexibility of the motor truck. While we are primarily equipped for the short haul, we will continue to coordinate our facilities with the facilities of the railroads on long hauls."

On the matter of coordinated rail-truck service, he told us that it will be used to a large extent when the run to the West Coast is started. Principal points will be Denver, Salt Lake City and important Texas centers where bulk will be broken. Also, it is now being planned to connect Los Angeles and San Francisco with the coordinated service, breaking bulk at the latter point.

Keeshin's contract with the Baltimore and Ohio, and that road's subsidiaries, which amounts to a joint agreement through their concurrence, has resulted in their publishing joint rates and tariffs. This contract involving a joint railroad service for less-than-carload freight, calls for the picking up of

## "VEL-VAC POWER BRAKES are O. K. on every count"



- |                       |                  |
|-----------------------|------------------|
| 1. CONTROLLED BRAKING | 3. SERVICE       |
| 2. ECONOMY            | 4. DEPENDABILITY |

**Says—**R. E. Halstead, President of the Detroit, Wyandotte and Trenton Transit Company, experienced operator of interurban buses.

**And to continue—**"There is nothing more severe than bus service with its numerous passenger pickups, its need to maintain schedules, its demands for smooth, easy "soft" stops. This kind of service requires power brakes that can take it—and stand the gaff . . . give consistent performance—and insure perfect braking action. That's why Vel-Vac Power Brakes are standard equipment with us."

There is a Vel-Vac distributor in every leading city. Improved exclusive Vel-Vac features offer the last word in economical power braking for fleet owners.

VACUUM POWER EQUIPMENT CO.  
1646 W. Lafayette Blvd.  
Detroit, Michigan

**Vel-Vac**  
ENGINEERED PACKAGED UNITS



POWER  
**VEL-VAC**  
BRAKES

package freight at the shipper's door by motor trucks and hauling it to local depots. There it is classified for destination points and loaded on trailers. Placed on flatcars, the trailers are then hauled by rail to destination cities where they are picked up by motor units for delivery to consignees.

THE new service will be performed at rates now in effect for the all-high-way haul and covers the entire B & O service, including New York City. In addition to this railroad service furnished by Keeshin and the B & O, the railroad will also have its own pick-up and delivery service in operation May 25.

During our talk he explained that he is working on other plans for other coordinated services. Some of these are still in the formative stages.

(Since this article was written hearings have been held before the I.C.C. on Keeshin's request for permission to acquire the stock of Seaboard Freight Lines, Inc., of Connecticut, and three affiliated companies.)

It was thought transcontinental service would be started in April, but laying the foundation was a bigger job than was at first anticipated, which explains the present delay. This foundation has been just about completed now, so it can be told definitely that the run will be started in a very short time.

Original plans for the run called for an estimated dozen terminals to be established between Kansas City and Los Angeles. It appears now that the number will be nearer 25 than 12. Another thing—original plans called for making Los Angeles the western terminus, while the plans today are to make San Francisco a regular port of call. And it would not be at all surprising if the end of the summer, or next year at the outside, found Keeshin trucks plying up and down the whole Pacific Coast.

That Mr. Keeshin leaves things largely to his department heads does not mean that he is out of touch with everything that goes on. Especially does he keep up contact with the dispatching department, which he considers as one of the biggest problems concerned with for-hire trucking operation. When we called at his office for this interview our's was the first appointment in his busy day. However, he already had learned that the trucks to Michigan were late in getting away during the night. He called the dispatcher's office, asked the reason, listened for a moment and said:

"But the railroads can load and dispatch on time, and we have to: see that it doesn't happen again."

The matter of urgent and emergency

calls, and small package pick-up and delivery are fast becoming a sore spot in trucking operation. With the Keeshin lines and their affiliates this is becoming more and more apparent. But Mr. Keeshin believes that he has discovered the cure. He plans shortly to experiment with motorcycles and sidecars for this work. He believes that they are the answer, and if they prove feasible they will be installed as regular equipment at all terminal points.

AT hearings conducted in Chicago the latter part of May by the Motor Car-

rier Division of the I.C.C., financing details of the Keeshin enterprise were made public for the first time.

Through testimony given by Harry M. Wyatt, attorney and accountant, every detail concerning the deal last August between Mr. Keeshin and Lehman Brothers, New York investment house, was revealed. Mr. Wyatt represented both sides in that transaction, and from the witness stand through nearly all day Monday he told voluntarily under direct and cross-examination the facts as to the organization of

(TURN TO PAGE 76, PLEASE)

# SENSATIONAL VALVE PACKING INVENTION

## THE FIRST VALVE PACKING THAT REALLY WORKS



**STOPS OIL AND AIR LEAKAGE COMPLETELY AND PERMANENTLY!**

**FREE  
TEST OFFER!**

**Patent Applied For**

**Cuts its own groove—No Special Tools Required**

# WILCO VALVE PACKING

consists of a hardened steel cage which fits over the top end of the valve guide compressing the packing material against the guide and around the valve stem. By rotating the cage the prongs cut a groove in the side of the guide (no special tools required for installation), clamping the cage permanently in place. It cannot come loose or otherwise cause damage. No moving parts—no springs—nothing to break or wear—nothing to interfere with valve action. The special packing material is the first and only material developed that actually stops leakage and will not go to pieces in the hot oil and gasoline. Being installed at the top end of the guide, lubrication of the stem in the guide is assured while leakage is positively and permanently stopped.

*Mail Coupon Today for Free Test Set!*

**Wilco Valve Packings fit practically all motor vehicles except:**

**Ford (all models)**

**Chevrolet (4 cyl.)**

**Wilkening Manufacturing Co.,**  
2000 So. 71st St., Philadelphia, Pa.

Please send me, FREE, a complete test set of WILCO valve packings for

Vehicle Name.....Model.....Year.....

My Name and Title are:.....

Name of my company is:.....

Company address is: St. & No. ....

City & State.....

This coupon good only when submitted with a letterhead by a fleet owner who operates his own Repair Shop and must be mailed before midnight August 31, 1936



# NEW STEWARTS

## *Slice*

# DELIVERY OVERHEAD

The NEW Low Price Stewart trucks mark a new era of transportation economy . . . Built with traditional Stewart quality and dependability, these 1936 models are *priced* to cut your original investment, they are *built* for minimum operating expense: to save on gas, oil and tire mileage; fewer repairs and delays.

Compare Stewarts with any low cost truck on the market for ease of handling . . . flexibility of performance . . . ruggedness of construction

and quality. You can then understand Stewart dependability and low repair expense.

Get full information on the Stewart model and capacity best suited to your requirements —There is a Stewart for any hauling requirement—capacities ranging from 1/2 ton to 10 tons. Catalog on request.

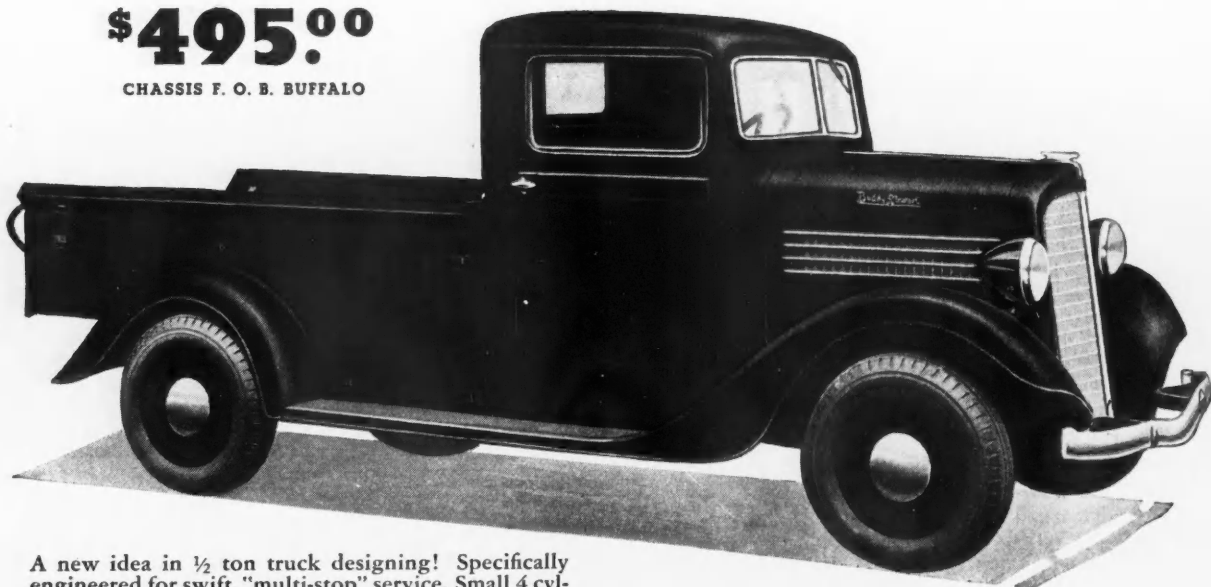
STEWART MOTOR CORPORATION

BUFFALO, N. Y.

**Buddy Stewart**

**\$495.00**

CHASSIS F. O. B. BUFFALO

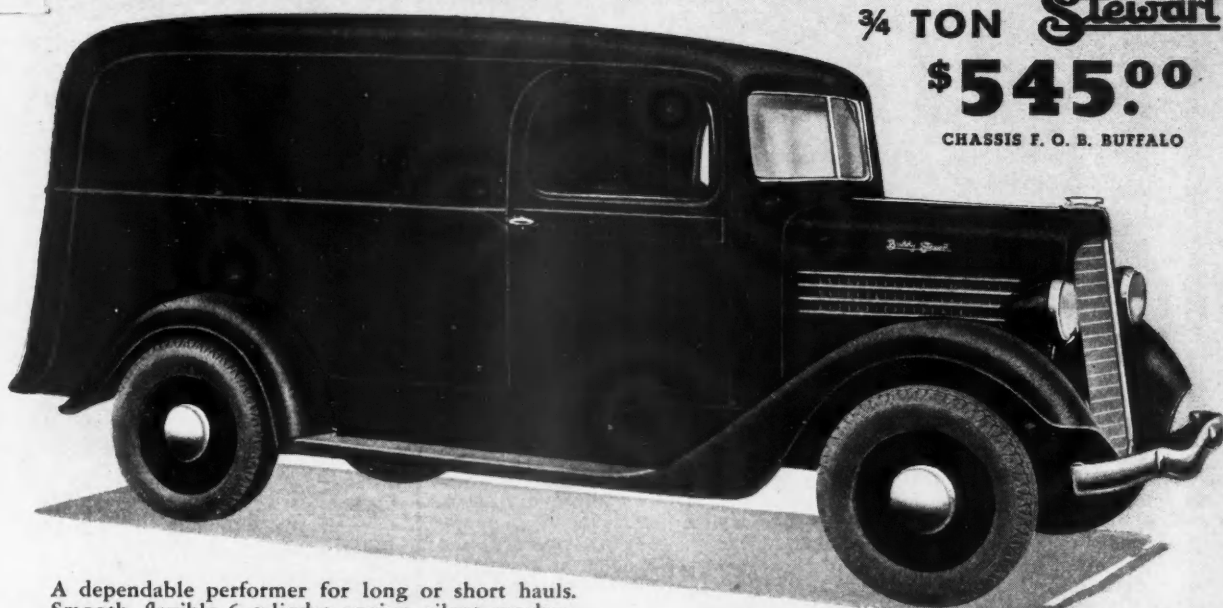


A new idea in 1/2 ton truck designing! Specifically engineered for swift, "multi-stop" service. Small 4 cylinder engine, extra large hydraulic brakes and clutch, synchro-mesh transmission, full floating truck axle.

STEWART TRUCKS AVAILABLE

✓ **LOWER** *Initial Cost*

✓ **LOWER** *Operating Cost*



$\frac{3}{4}$  TON **Stewart**

**\$545.00**

CHASSIS F. O. B. BUFFALO

A dependable performer for long or short hauls. Smooth, flexible 6 cylinder engine, silent synchromesh transmission plus Stewart's "100% truck" construction throughout. A real investment in economy.

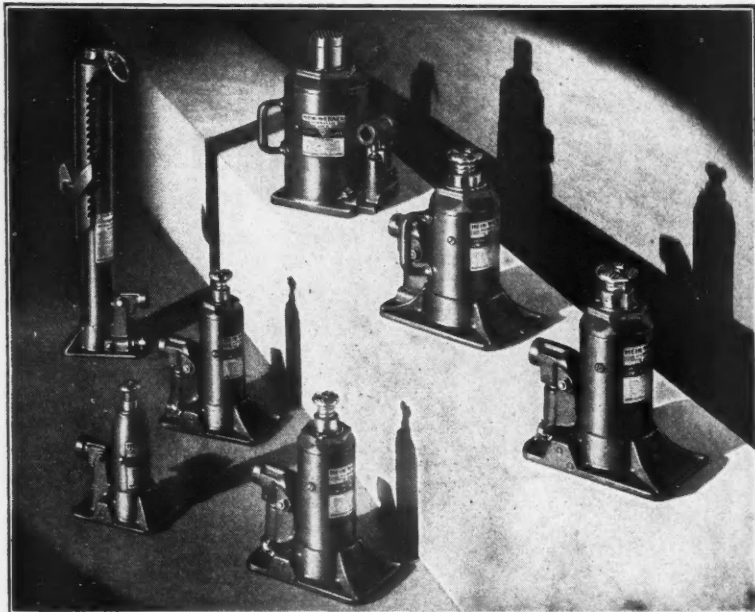
**NEW 1½ TON** **Stewart**  
**\$595.00**

CHASSIS F. O. B. BUFFALO



Here's heavy truck dependability with attractively low initial cost. Powerful 6 cylinder engine, rugged clutch, four speed transmission, full floating rear axle, 4 wheel hydraulic brakes, plus many other improved features.

## LOOK 'EM ALL OVER -- and you'll buy one of these Hein-Werner Hydraulic Jacks



### A COMPLETE LINE BUILT RIGHT—PRICED RIGHT

**C**OMPARE any hydraulic jack on the market with a Hein-Werner—and you will quickly convince yourself why you should equip every truck and car in your fleet with a Hein-Werner Hydraulic Jack.

These jacks are exceptionally compact, sturdy, easy to operate and SAFE. . . . It is impossible for one of these to lower accidentally, because handle must be removed from pump to open release valve. All are tested at 1½ times their rated capacity, and are designed for hard, dependable service.

This line includes the "Bullet" Model, 1½ ton capacity at \$2.80 (West Coast \$3.10) . . . For light trucks, 3 ton models at \$7.95 (West Coast \$8.45) . . . 5 ton models \$9.95 (West Coast \$10.65) . . . For medium heavy trucks, motor coaches and shop use—7 ton models \$13.45 (West Coast \$14.50) . . . For heavy trucks, buses and shop use—12 ton models \$19.95 (West Coast \$21.00) . . . 20 ton models \$30.00 (West Coast \$31.00)—and for modern passenger cars, our new BUMPER-LIFT Model at new low price of \$4.95 (West Coast \$5.65) . . . All prices are net to dealer or fleet owner.

### New 20 Ton Model . . . \$30.00 Net to Dealer



In response to popular demand, and in keeping with our policy of producing a quality product to sell at a price that leaves no room for argument—we recently introduced our new 20 Ton Hydraulic Jack. It is an exceptional value, and all fleet operators are cordially urged to ask for details on this model, and on all others in this complete line.

HEIN-WERNER MOTOR PARTS CORP.  
Waukesha, Wisconsin

FEW MODELS ENGINEERED TO DO THE WORK OF MANY  
**HEIN-WERNER**  
*hydraulic JACKS*

(CONTINUED FROM PAGE 73)

Keeshin Transcontinental after the stock in Keeshin Motor Express had been surrendered. He gave testimony also on the details of the "voting trust" to which both Mr. Keeshin and Lehman Brothers surrendered 1,500 shares of stock each with the further provision that when stock franchises are exercised in the future the shares in the "voting trust" are to be increased to always give an equilibrium of holdings. Mr. Wyatt testified that John Hertz, former Chicago taxicab magnate has no stock personally in the company, "not one single share," he said. On this point attorneys for railroads subjected him to strenuous cross-examination, declaring that they had heard as to John Hertz' extensive holdings. It was put into the records that several of the trust funds which Mr. Hertz, who is a partner in Lehman Brothers, has set aside for members of his family, have purchased approximately \$150,000 worth of stock in the Keeshin Transcontinental Co. from the voting trust at \$100 par value, but that he personally holds more.

Mr. Wyatt related also the details surrounding Mr. Keeshin's surrender of his stock in Keeshin Motor Express and of the blocks of stock which he received in their stead in Keeshin Transcontinental.

Facts as to other companies and lines which are affiliated with the gigantic Keeshin organization were told by C. R. Olson, vice-president in charge of operations of the entire system. Mr. Olson gave one of the most straightforward pieces of testimony that has ever been given before an I.C.C. hearing on trucking affairs. Off the records his testimony was commented on by various persons who had filled the hearing room. He reviewed the acquisitions of various small trucking concerns from time to time and of their mergers and final abolishment as separate identities after being combined with other companies and lines which go to make up the general organization. Without revealing any of Mr. Keeshin's plans for future expansions he let it be made a part of the records that Mr. Keeshin has always been an advocate of federal regulation of the trucking industry, and explained that a number of things which it expected will be done in the near future are being held in abeyance until such time as the motor carrier division can begin to function as it hopes.

Shippers from Iowa who are being served by the national concern testified that the service which they have been getting since February 9, the date that the contract to purchase between the national and Keeshin companies was made subject to I.C.C. approval, has been materially improved.



A Better Valve  
Steel for the  
Cars of Today  
and Tomorrow

# RICH

Combines Two Wonderful  
New Materials  
to Produce a

The Hardest  
Most Heat-Resisting  
Material  
Ever Used in  
Motor Valves

**SILCROME**

# SUPER VALVE

*Haynes*  
**STELLITE**

Today's higher motor speeds, higher compressions, and more powerful fuels have set up VALVE PROBLEMS. HERE'S THE ANSWER TO THESE PROBLEMS — SILCROME-X. Silcrome-X is the last word in valve steels. It is the answer to engineers' demands for a steel that defies any punishment the engines of today can give it. Silcrome-X sets a new high standard of valve efficiency and long life.

Wilcox-Rich announces a new Rich Valve made of Silcrome-X, the steel which sets new and higher standards of resistance to red heat and corrosion — and faced with Stellite, the hardest, toughest, most heat-resisting material ever used in valves!

Result: a DOUBLE DUTY VALVE. It offers *undreamed-of performance and economy!* Designed for the highest powered engines of today, it brings *amazing efficiency and economy to owners of motor trucks!* Higher in price, yes. Yet it costs you far less in the long run!



# RICH

*Double Duty*

# VALVES

*with Stellite Face*

Stellite is the super material for valve facing. Stellite remains practically as hard when intensely hot as when cold. Stellite shows amazing resistance to wear pitting, etching, burning. It offers complete burn-out proof protection. Stellite is completely unaffected by detrimental deposits. It insures 100% valve seat efficiency. It represents the "top" in economy and long life.

**LUDLUM  
STEEL  
COMPANY**

**HAYNES  
STELLITE  
COMPANY**

## Motor Freight Classifications Get the 3rd Degree

(CONTINUED FROM PAGE 23)

part from the words, form, and general scheme of the present railroad classification.

While I did not expect a different kind of classification merely for the sake of being different, I did look for a truck classification that would be molded to the distinctive needs of the trucking industry, and one that would evoke a trucking rate structure independent of and for the most part un-

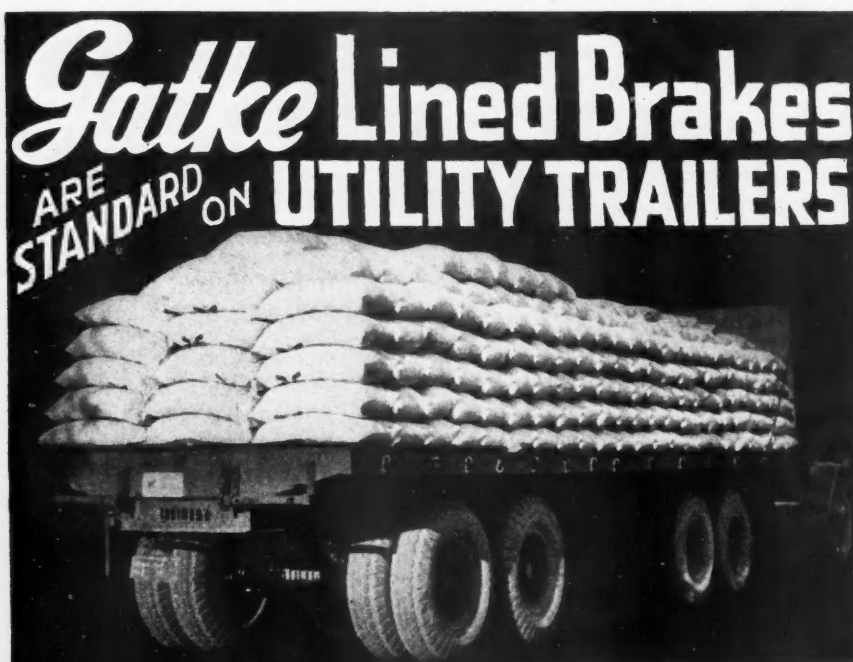
related to railroad rates. Incidentally, this writer's viewpoint may be made a bit clearer by stating that he is strongly of the opinion that the trucker does not have to fix his rates with an eye single to railroad competition. The railroads are the ones on the run. The truck today finds its position in the transportation scheme assured. Thus, I think that trucking rates can be based almost altogether on the cost of operation plus a fair return on the investment, without doing injury to the volume and character of highway traffic. Moreover, in the final analysis truck rates will have to seek this level, whether it

be higher or lower than the present one. There is an inexorable economic law that eventually will compel this.

It is natural to expect that one holding these views would object to the NMFC. It is entirely too much like the railroad classification, even to word-for-word descriptions that bear every indication of being at least inspired by the rail publication. However, the real jolt came with the discovery that there are two publications, one of 205 pages for Volume ratings and the other of 178 pages for Less Truck Load shipments. Even though two separate classifications may have seemed necessary because some truckers are interested only in L.T.L. traffic and others only in T.L. business, while still others could not agree to the volume ratings provided, nevertheless different measures could be taken to avoid the issuance of two classifications. For example, one publication could have carried both the T.L. and L.T.L. ratings, with all carriers participating. Then any carrier who desired to limit the extent of participation or avoid being subject to any certain rules, regulations or ratings could make that fact clear in a tariff of exceptions or in the tariff carrying the rates themselves. If one pleads that tariffs of exceptions are confusing it must be remembered that they are inevitable when so many carriers subscribe to one basic publication, such as a classification.

THE objections to two separate publications for L.T.L. and T.L. are obvious. The sheer bulk alone is enough to annoy traffic men already trying to keep their heads above the flood of railroad tariffs. But more important is the fact that traffic men have become so accustomed to the single volume railroad classification, containing both C.L. and L.C.L. ratings, that it is difficult for them to accept the National Motor Classification with any show of enthusiasm. Shippers are not interested in discovering reasons for the two volumes. They simply know that the rail carriers have the entire story in one volume, so why not the trucks? Moreover, shippers have observed with pleasure that the railroad classification during the past few years has been steadily shrinking. About eighty-five pages have been lopped off during the past few years. It seems strange to find the tradition-defying trucking industry lapse momentarily and outdo the railroads in antique tariff ideas.

Another question that occurs to the writer is whether it is really necessary for the National Motor Classification to have three rate territories, East, South and West. Not long ago Coordinator of Transportation Eastman published



450 Sacks of Cement—  
42,750 lbs.—on Utility Trailer  
(made by Utility Trailer Mfg.  
Co., Los Angeles) equipped  
with Gatke Brake Blocks.

There's a GATKE Brake Lin-  
ing that affords extra per-  
formance on every service  
requirement of cars, trucks  
or buses. Write for catalog.

**Gatke**  
**HI-POWER**  
**BRAKE BLOCKS** are  
**sold on a GUARANTEED**  
**MILEAGE**  
**BASIS**

**UTILITY TRAILERS** are BUILT TO TAKE IT.  
Carrying 40,000 pounds over moun-  
tain roads requires strength and stamina  
—plus powerful brakes that retain their  
efficiency all the way to the bottom of  
five-mile grades.

Year after year Gatke Brake Blocks have  
met these exacting service requirements  
and remained standard equipment on  
Utility Trailers.

Gatke HI-POWER Brake Blocks on your  
toughest power jobs will open your eyes  
to greater safety and lower operating cost  
for the entire fleet.

### MAIL THIS COUPON

GATKE CORPORATION  
228-A N. La Salle St., Chicago

Please send complete information about Gatke  
HI-POWER Brake Blocks and the Guaranteed  
Mileage Basis on which they are sold.

Name .....

Address .....

We try to Diagram where the  
**BONUS-LOAD** comes from



In this photograph of a truck operated under contract by Brown-Elliott, Inc., you will notice that about 60% of the truck body is hidden behind the leaf on which these words appear.

That is the part of the body which would have constituted unnecessary ballast if it had been built of ordinary materials.

Actually, this body is built of Alcoa Aluminum. It weighs only 1700 pounds. A similar body of heavy materials would have weighed 4100 pounds.

Obviously, 2400 pounds, or 58.5%, of that old type of body would have been just plain ballast.

Alcoa Aluminum throws off the ballast and lets you haul income-producing, profitable Bonus-Load, instead.

No operator will long tolerate the wasteful operation of heavy bodies, if he will ask himself this simple question: Which shall it be, ballast or Bonus-Load?

Hundreds of operators have decided that question for once and for all. They specify Alcoa Aluminum. That's simple enough, but if you feel you would like further guidance, address ALUMINUM COMPANY OF AMERICA, 2139 Gulf Building, Pittsburgh, Pa.

This body was built for Brown-Elliott, Inc., by Finn Auto Body Shop, Cincinnati. Alcoa Aluminum makes possible a Bonus-Load of 2400 lbs., nearly  $1\frac{1}{2}$  times the whole weight of the body.



# ALCOA · ALUMINUM



(CONTINUED FROM PAGE 78)

studies indicating that in so far as railroads were concerned there was not enough difference from region to region to justify the three rate territories in the rail classification. He urged the railroads to abandon the tri-territorial scheme in favor of one classification for the entire nation. Others equally well informed are of the same mind. I know of no reason why the National Motor Classification could not have done the same thing, thereby pleasing shippers, scoring on the railroads, and

serving the ends of simplicity and common sense. Again one has the feeling that the three rate territories and the classification variations from region to region were primarily designed to parallel the rail classification. Certainly they are not the product of independent study of the needs and limitations of highway vehicles.

It is possible, of course, that since I am on the shippers' side of the fence I am overlooking valid reasons for some of the things criticized. For example, I fail to see why the National Motor

Classification has volume ratings with minimum weights often much higher than can be loaded on a single truck. Granted this has been done so that trucks can match their ratings with the railroads, and that provisions had to be made for certain large movements of freight by truck. In the first place, such large movements of freight via truck are so relatively infrequent that adequate provision could have been made for them in a tariff of exceptions or special commodity tariffs. Moreover, if truckers are going to publish rates that will match the railroads rate for rate, minimum weight for minimum weight (I'm speaking now of carload or T.L. traffic), they will have to publish commodity tariffs and exceptions like the railroads. And the railroads have about 500,000 current tariffs and supplements containing 2½ million pages. On the other hand, if the trucks offer no inducements for much of this rail carload business other than the ratings and minimum weights provided in the volume classification they are doomed to disappointment. They will have to bid much lower than that. For instance, trucks will seldom be able to meet railroad rates on long hauls of steel pipe, cement, brick, structural steel, grain and large steel tanks.

The volume classification carries low ratings on articles that previous to April 1 the great majority of truck operators would not handle except at relatively high rates. *Truck operators would be well advised to lose no time in drawing up a list of excepted or prohibited articles, based on what they are equipped to handle at published rates.*

No doubt many readers will argue that since numerous volume ratings are allegedly futile they are at least harmless. But this is a short-sighted attitude. In the first place, they are a step in the wrong direction. They are clearly based on the wholly fallacious proposition that trucks can meet the railroads rate for rate, weight for weight, on all commodities, between all points. This is a false and dangerous idea to implant in shippers. It is also paving the highway to impoverishment for an industry now enjoying sound economic health. Moreover, I am certain many of the truck carriers participating in the volume classification have not the least idea of the rates to which they have committed themselves. Surely it will not help them nor the trucking industry in general when they are called upon to live up to the volume ratings. They will be obliged to renege or do the work at substantial losses. If they renege the shipper is likely to make a legal issue of it. Besides, what are they going to do when offered volume traffic of low-rated articles destined to points not located on rail-



NO "DRAG" AT

40°

BELOW  
ZERO

**A. W. BOQUET** ★  
—President of ON-TIME TRANSFER CO.,  
Inc., operating between Omaha and Chicago, and  
one of the nation's outstanding leaders in truck  
organization activities, says—

"Cold weather as low as 40° below zero did not  
handicap us in brake application. We did not ex-  
perience 'dragging' or 'freezing' brakes, probably  
because Lathan-Besler Power Brake does not ne-  
cessitate oiling or servicing. This complete satis-  
faction has brought home to us the importance  
of economical brakes, and we are  
changing our entire fleet to  
100% Lathan-Besler."

Signed—  
**A. W. BOQUET**  
President

★  
**LATHAN**  
BESLER

Engineered

**POWER BRAKES**

**D**O NOT let "trick" features and theoretical talking points divert your attention from FUNDAMENTALS. There is NO substitute for the PROVED economy, UNIFORM, year around satisfaction, and MAINTENANCE-FREE operation you get with LATHAN-BESLER. Nationwide sales and service. Be sure to see the new 1936 LATHAN-BESLER Catalogue before you buy ANY power brake. Write for your free copy TODAY.

LATHAN CO., Inc. SAN FRANCISCO—Polk & Pine Sts. (Since 1911)  
DETROIT—477 Selden Avenue

# OLD MOTORS hum LIKE NEW after a SIOUX Valve Job

You can give your customers NEW CAR performance . . . at a price that makes them happy . . . and still have a bigger profit for yourself . . . when you use SIOUX equipment. Modernize your shop with these two accurate and fast SIOUX Tools.

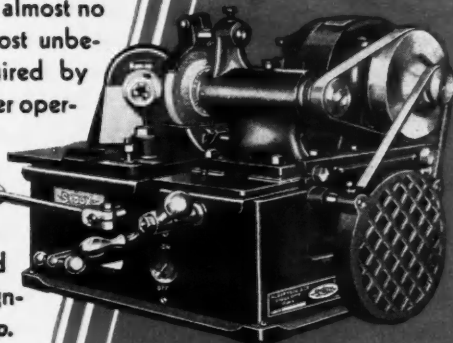
## SIOUX DUAL ACTION VALVE SEAT GRINDER

grinds any valve seat . . . even the hardest valve seats now in use . . . to perfect mirror finish . . . in almost no time at all. Its speed and accuracy are almost unbelievable . . . saves 75% of the time required by other methods. The Sioux High-Speed Driver operates at 12,000 R.P.M. load speed, transmitting its speed directly to the Grinding Wheel Holder, cutting hardest metal instantly and accurately. Set-up is the same as for reaming, using SIOUX tapered pilots to assure absolutely correct alignment. *Priced within reach of every shop.*



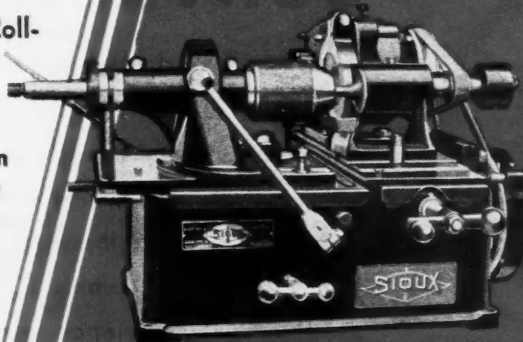
## SIOUX VALVE FACE GRINDING MACHINE

with the exclusive Sioux Roller Chucking System which makes it so easy and fast to reface valves with precision accuracy. In many shops these machines have been giving faithful service for years. Made in four models . . . one to fit your needs.



No. 620 and 650

*SIOUX Valve Face Grinding Machines for valves of 30°, 45°, 60°, 80° and 75°. No. 620 checking capacity 1/4 to 3/4 inch. No. 650 1/4 to 1/2 inch diameter, inclusive.*



No. 664 and 654

*for valves of any angle, including Boyle valves and 90° Mack valves. No. 664 checking capacity 1/4 to 1/2 inch, inclusive. No. 654 checking capacity 1/4 in.*

Your Jobber

STANDARD THE



Sells Them  
WORLD OVER

ALBERTSON & CO, INC.

SIOUX CITY, IOWA,

U. S. A.

(CONTINUED FROM PAGE 80)

roads? Looks as if they will have to haul it, loss or no loss.

It is hardly possible to set forth these objections briefly since in all fairness they must be qualified and elaborated upon. Otherwise they are meaningless. Dissenting truckers are bound to insist that in many instances they can operate at a profit under the volume ratings. I don't doubt that. But why in such cases must a shipper have two truckloads at one time, from one point to one consignee, in order to obtain a rate comparable to the railroad carload rate? If trucks can meet the rail car-

Commodity Group	% Moving via Truck (1933)	Railroad Class.		Natl. Mtr. Class.		Average Truck Load*
		Min. Wt.	Class	Min. Wt.	Class	
Automotive parts.....	28.5	30,000	5	30,000	5	11,000
Canned goods.....	28.0	36,000	5	36,000	5	15,000
Paints, varnishes, gum.....	27.5	36,000	5	36,000	5	9,000
Beverages and liquor.....	27.0	30,000	4	36,000	5	15,000
Groceries.....	27.0	36,000	5	30,000	5	12,000
Rubber, rubber articles.....	20.5	30,000	4	30,000	4	16,000
Barrels, cooper material.....	18.5	36,000	5	36,000	5	8,000
Dry goods, clothing.....	18.5	Usually First Class, Any Quantity		Usually First Class, Any Quantity		16,000
Boots and shoes.....	18.0	24,000	2	24,000	2	19,000
Vegetable oil, meal and cake.....	17.0	30,000	5	30,000	5	19,000
Furniture and furnishings.....	14.0	20,000	3	12,000	2	13,000
Cotton, cotton linters.....	16.5	20,000	4	20,000	4	14,000
Paper, paper products.....	13.5	36,000	5	30,000	5	18,000
Textiles.....	12.0	Usually First Class, Any Quantity		Usually First Class, Any Quantity		15,000
Leather, leather goods.....	11.0	30,000	4	30,000	4	19,000
Books and periodicals.....	10.5	36,000	3	30,000	4	14,000
Plumbing and heating supplies.....	7.0	30,000	4	30,000	4	15,000
Timber.....	8.0	36,000	5	36,000	5	11,000
Chemicals.....	4.5	30,000	4	30,000	4	14,000
Petroleum.....	2.5	26,000	5	26,000	5	17,000
Tobacco, tobacco products.....	5.0	30,000	3	30,000	4	13,000
Machinery.....	4.5	24,000	5	24,000	5	11,000

\* Reported by 40,000 shippers in 1933.

## LET YOUR 1½ -2 TON TRUCKS EARN DOUBLE PROFITS



## CONVERSION UNIT

Double payloads and earning ability! Cut operating costs and equipment investment! Simplified design, rugged construction, proper proportion, and painstaking engineering make Timken's 6-Wheel Conversion Unit an integral strengthening chassis member that fits your trucks' power plants.

18 years' experience as pioneers of the 6-wheel idea, and thousands of successful, profitable installations, prove conclusively that Timken's quality methods are the best possible assurance of lowest cost operation, of greatest satisfaction and profit.

**An idea worth considering . . . Timken 6-Wheel Unit and the Timken**

**2-Speed Axle, double reduction, for light duty trucks.**

**6-Wheel Headquarters — the World's Largest Axle Builder**



**THE TIMKEN-DETROIT AXLE COMPANY, DETROIT, MICHIGAN  
WISCONSIN AXLE DIVISION, OSHKOSH, WISCONSIN**

The above table shows the relation of truck classification to railroad classification

load rate when handling two or three truckloads why can't they do it with one truckload? If they can do it with one truckload why chance losing the business to the rails by insisting, through the volume classification, that the shipper move two or three truckloads at one time? Shippers are puzzling over these questions.

THE following table will indicate the general grounds upon which this objection to the volume classification is based. It is worth noting that the reports of 40,000 shippers to Coordinator Eastman reveal the average truckload for each of the commodity groups named was less than 20,000 lb. and usually much less. On the other hand, the railroad minimum weights are in every case much higher than the average truckload. Clearly, the rail minima are based on a realistic appreciation of the box car's capacity for the commodity in question. But the volume minima in the National Motor Classification bear no relationship to the capacity of trucks. They are related only to the minima established by the railroads for box cars. The same is true of the class ratings shown in the table. Incidentally, these ratings and minima are averages for each commodity group.

One final remark about the volume classification. It is possible this publication may result for a while in trucks losing business they could handle at a savings. This might result when a shipper with 20,000 lb. of freight turns to the volume classification only to discover a minimum weight of 36,000, the same as via railroad. Of course, this shipper can frequently find in the trucker's exceptions to the classification a table providing for progressively lower rates on lots of freight from 5,000 lb. up to 20,000 lb. However, many of the small shippers will have to be edu-



# Efficient TRUCKING



**TANKS:** Streamlined, semi-streamlined or conventional designs for gasoline, fuel oil, milk, etc.



**BOTTLER'S BODIES:** All steel, deck type. Maximum strength and capacity, minimum weight. All types and sizes.

## ... means GAR WOOD

Experienced trucking men in every field depend on Gar Wood equipment. Twenty-three years of constant development—twenty-three years of close cooperation with truck manufacturers and users, have made Gar Wood equipment so useful, so dependable and so efficient that today Gar Wood Industries are the largest builders of truck equipment in the world. We can help you make your present truck better or your next truck the best in its field.

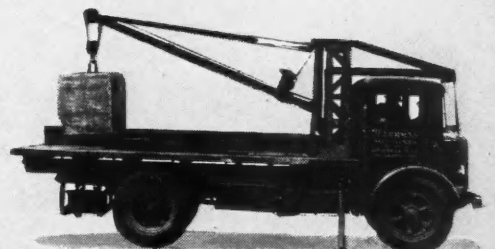
There is a Wood Branch or Distributor nearby who can serve you. Let these hauling specialists give you recommendations on your next equipment.

### GAR WOOD INDUSTRIES, Inc. Detroit, Michigan

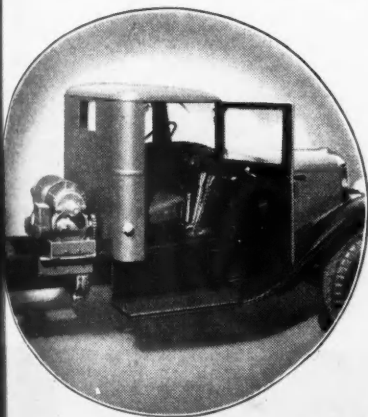
**WINCHES:** All types for all classes of hoisting and hauling work. Also power take-offs and drives.

**COAL AND COKE BODIES:** Fuel dealers will find a wide range of steel and aluminum bodies, hoists and bi-lift units in the Gar Wood line.

**CONTRACTOR'S BODIES:** Many combinations of hoists and bodies are available for the contractor, landscape gardener, and general trucker.



**CRANES:** The complete line of Mead Morrison cranes and derricks provides a wide selection of models to suit individual needs.



(CONTINUED FROM PAGE 82)

cated to that idea. It is something they will not often think of or expect. In many cases of this kind, business will probably go to the railroads until such oversights are eliminated.

It is interesting to note, in this connection, how Dabney T. Waring, agent for the Middle Atlantic Motor Carriers Conference, has met this question of high minimum weights for the volume ratings. In a tariff of exceptions to the National Classification, Rule 10 neatly disposes of this barrier by saying: Where the volume ratings provided in

classification apply on freight in truckloads, subject to minimum weights as follows:

T. L. Minimum Will Be		T. L. Minimum Will Be	
8,000	8,000	18,000	13,000
10,000	8,500	20,000	14,000
12,000	9,000	21,000	14,500
14,000	10,000	24,000	16,000
15,000	11,000	26,000	17,000
16,000	11,500	28,000	18,500
17,000	12,500	30,000 up	20,000

However, many truck carriers have not yet provided the same arrangement.

**T**HE National Classification, Rule 12, governing mixed truckloads can, in my

opinion, stand revision. As it is now the shipper must pay on all the load the rate for the highest rated article at the highest minimum weight for any article. The railroads have a fairer rule in that it allows several alternatives. It is hardly more than a question of printing to make this change. Few should object.

The striking feature of the Official Motor Freight Classification No. 1, published by J. M. Adelizzi, Agent, Hartford, Conn., for New England motor carriers, is its liberality to the shippers. Although there is not space here to analyze the publication, nevertheless many of the ratings provided are so low that even avaricious shippers cannot conceal their astonishment. Look in the index of this classification and you will find innumerable references to item one on page nine. Turn to that item and page and you discover that such articles take the Fifth Class rate, T.L. and L.T.L. Now remember that Fifth Class is the usual rating for carloads via railroad. But carriers subject to this classification will even haul L.T.L. shipments at the same rating. A few of the articles taking Fifth Class T.L. and L.T.L., and the rail classification for L.C.L., are shown below so that readers will not think this an exaggeration.

Comparison of T.L. & L.T.C. Classification to L.C.L. Classification

Article	T.L. & L.T.L. Classification	Railroad L.C.L. Classification
Abrasive	5	4
Acetylene gas	5	3
Acetanilid	5	3
Advertising calendars	5	2
Air brakes, auto	5	1
Alcohol (various)	5	1st, 2nd, 3rd
Alloys (various)	5	3
Aluminum articles	5	1st, 2nd, 3rd
Ventilating apparatus	5	3
Asbestos packing, sheathing	5	2nd, 3rd
Bolsters, truck body	5	4
Auto parts (various)	5	1st, 2nd, 3rd
Carbon tubes, carbon products	5	2
Cards, accounting machine	5	3
Compound, motor-fuel, anti-knock	5	1
Copper articles	5	1st, 2nd, 3rd
Iron or steel drums	5	2nd, 3rd
Engines, internal combustion	5	1st, 2nd, 3rd
Extracts (various)	5	1st, 2nd
Hardware, N.O.I.B.N.	5	3
Petroleum oils	5	3
Paper (various)	5	1st, 2nd, 3rd

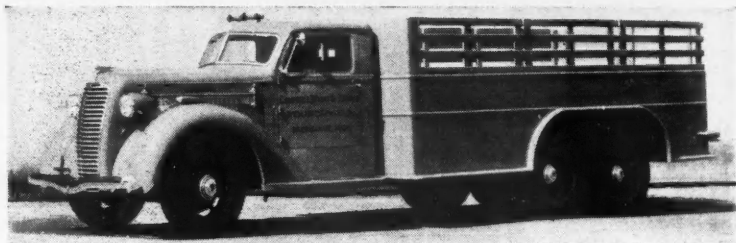
Except for these and many other such clearly depressed ratings this classification is a worthwhile piece of work. Its mixed T.L. rule is better than the National Classifications, its "over-flow" rule is good, and the general tone of the publication is helpful. However, I question most seriously if such low ratings can be justified. Surely they are not necessary in order to garner the traffic.

**F**OR clarity, brevity and originality the Trans-Continental Motor Truck Classification No. 1, published under

COMMERCIAL CAR JOURNAL

# TRUXMORE

WORLD'S BEST 3<sup>RD</sup> AXLE



A standard Diamond T—TRUXMORE 3-Axle Truck.

## Reduces Your Insurance Costs

Buffalo to New York City . . .	\$228.38*	This is what <b>YOU</b> <b>SAVE</b>
Detroit to Chicago . . . . .	112.44*	
Cleveland to Buffalo . . . . .	147.54*	
Philadelphia to Pittsburgh . . .	214.81*	

## COMPARED TO ANY SEMI-TRAILER OF SAME CAPACITY

\*Difference in lowest premium for Public Liability & Property Damage Insurance between points shown.

TRUXMORE 3rd AXLE makes further SAVINGS on Gasoline, Tires, Deadweight, and Running Time—often totalling \$1,000 a year per truck.

**We Make Both 3rd Axles and Semi-Trailers**

Write for what users of Both Say—Address Dept. A

New York  
Syracuse, N. Y.  
Binghamton, N. Y.  
Rochester, N. Y.  
Erie, Pa.



Chicago, Ill.  
Philadelphia, Pa.  
Pittsburgh, Pa.  
Boston, Mass.

# VOTE FOR BLACKHAWK HYDRAULIC JACKS

22 MODELS · 1 TO 75 TONS

COMPACT *and* RUGGED

OPERATE VERTICALLY  
OR HORIZONTALLY

POSITIVE SCREW  
TYPE RELEASE VALVE

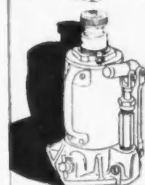
SIMPLE, TROUBLE-  
PROOF VALVE  
CONSTRUCTION



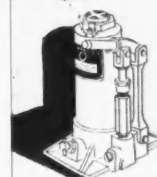
CASTING A UNANIMOUS VOTE  
FOR  
BLACKHAWK



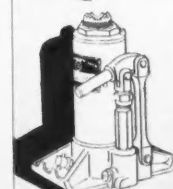
"My vote goes to the M-7.3. This squatty 5-tonner boosts up heavy trucks or buses without disturbing load or passengers." — Driver.  
Price .....\$23.00\*



"I'm strong for the D-8.7 — a 12-ton shop worker that can't be beat." — Shop man.  
Price .....\$20.70\*



"The AA-8.5 gets my vote. Sturdy, compact — 5-ton Light-Heavy — and a fast, easy lifter." — Fleet Owner.  
Price .....\$10.85\*



"I need a husky that will stand the gaff of heavy duty jobs — so I check on this CB9 8-tonner." — Trucker.  
Price .....\$14.15\*

**W**HAT a landslide! Throughout the country leading truck and bus makers, fleet operators, shop-men and drivers are voting the straight Blackhawk ticket! They **KNOW** from actual experience that Blackhawk Hydraulic Jacks have **EVERYTHING**. Power galore — dependability — wide range of uses — easy operation — micro-control — safety. Yes Sir! — they save time and money — and make money, too!

## NEW LOW PRICES!

Now Blackhawk offers greater values than ever with lower prices. Get on the Blackhawk band-wagon — and ride to success with the line of hydraulic jacks that have won the nation's vote for all-around supremacy! Ask your Jobber Salesman about Blackhawk's full line of hydraulics — 1 to 75 tons. Write for free literature. Better still — order **NOW!**

**BLACKHAWK MFG. COMPANY**  
DEPT. CJ-6  
MILWAUKEE, WISCONSIN

\*Prices slightly higher on West Coast and Canada.



Model EA-11. A 20-ton job — 11" Low — hydraulic lift 6½" — total High 17½". Price .....\$35.00\*

**BLACKHAWK** HYDRAULIC JACKS



(CONTINUED FROM PAGE 84)

the auspices of the Keeshin Motor Express, seems superior to the others already mentioned. Of course, the compiler of this classification had the highly important advantage of a unified and closely-knit organization back of him. Since the Classification is primarily for the Keeshin organization there were no compromises to be effected between conflicting interests, no factional disputes as to methods and objectives. Moreover, the compiler no doubt had the benefit of carefully gathered operating data and traffic statistics. Nevertheless, it is a wholly

worthwhile document of only 83 pages.

In examining this classification one gets the impression that Keeshin is going to make a reasonable profit on your traffic or he is not going to handle it. For example, one finds a rule to the effect that articles not specifically listed in the classification will be charged the Column One, or First Class, rate, subject to a minimum weight of 15 lb. per cubic foot.

Brevity is well illustrated by turning to "acids." Keeshin's classification simply says, "Acids, N.O.I.B.N."; in the National Classification there are 30 subdivisions under heading "Acids."



Acme Photo

## COULD BOLD VENTURE HAVE WON THE DERBY WITH PRIMO CARNERA UP?

Would anyone have cared to bet that Bold Venture would win the Kentucky Derby had Primo Carnera been the jockey? With all that excessive weight on his back, the fleet Bold Venture would soon have been outdistanced by every horse in the field.

Dead weight on a truck is like excessive and unnecessary weight on a race horse. Unnecessary weight in a truck body means less pay load, higher cost per ton-mile. Haskellite Plymetl truck paneling eliminates dead weight, makes flatter, smoother sides and stronger bodies. Plymetl is many times as stiff as steel of the same weight.

Plymetl has other outstanding qualities. It comes in shippable sizes large enough for an entire side. It needs no inside braces or supports to give it needed rigidity and strength. Moreover, it is as easy to clean as a window—dirt, scum and grease can be removed so easily and quickly that trucks always look like new.

Plymetl is extremely light, yet extra strong and exceedingly durable. Insist upon it in your specifications.



ILLUSTRATION AT LEFT SHOWS A NEW  
GEORGE HIRN JOB MADE OF PLYMETL

### HASKELITE MANUFACTURING CORPORATION

208 WEST WASHINGTON STREET, CHICAGO, ILLINOIS

Keeshin's classification will not cause any confusion because of volume ratings since all ratings are for L.T.L. only. However, large lots of freight are provided for by a table in the tariff that reduces the rate as the weight increases. Moreover, the tariffs provide for "All Commodity" rates between principal points. Incidentally, they are not too low, either.

**AMONG** other provisions of interest in Keeshin's tariffs is a "Maximum Load Limit." It is, 20 ft. long, 6 ft. wide and 5 ft. 9 in. high. These tariffs have clauses for the assessment of demurrage at the expiration of 24 hours free time on truckloads, trailer loads and semi-trailer loads. The charge is \$5 for the first 24 hours; after that storage at shipper's expense, at the option of the carrier. This is not unreasonable. There is also a "tolerance" or overload rule permitting up to 5% over 20,000 lb., chargeable at the Trailer Load rate. Any excess above that is charged the L.T.L. rate.

A minor but commendable feature of the Keeshin tariffs is that they list the street addresses and telephone numbers of all terminal points. Warning is given in the publications that instructions to pickup received after 3 P. M. cannot be acted upon that day.

In bringing this discussion to a close there is just space enough to mention a few other items in the new tariffs which have thus far caught the eye. Agent Waring publishes a "re-delivery" charge which consists of the tariff rate from the nearest terminal point to destination, subject to a 10 cent per cwt. minimum charge, plus accrued freight and storage. While this may be just, it is sure to brew some delightful pro and conning. Central Motor Freight Association tariffs, Harry M. Slater, Agent, provide that rates lower than fourth class apply only to movements handled by a single carrier. These tariffs—which, by the way, are excellently put together—carry density regulations, over-flow rules, intermediate rules, and an involved rule covering mixed T.L.'s.

The Cleveland, Columbus, Cincinnati Highway, Inc. Tariff No. 1 publishes exceptions to the National Motor Classification which increase ratings on certain articles more than 400 per cent. For example, boxes, other than iron or steel, and cans, pails, tubs, 2-qt. capacity or less, are charged four times first class rate. Neon signs, for some unknown reason, are charged ten times the first class rate. Rather than refuse to accept these and other articles considered undesirable, this outfit charges unbelievably high rates on them. Some shippers might bite.

(TURN TO PAGE 88, PLEASE)

# FWD TRUCKS with their



# Controlled Power

## Make more round trips at low cost per load mile!

**T**RANSPORTING heavy, bulky loads at present day speed demands, over variable roads in all weather conditions with **Safety** — is assured those haulers operating FWD Trucks.

The FWD divides the load and power over the four driving wheels, consequently the driver has more control over the truck . . . There is not the danger of sluing or skidding on slippery or icy roads, or on curves — because the four wheels have positive traction.

Include FWDs in your fleet . . . They will give you more round trips at low cost per load mile . . . They will perform dependably, economically and safely regardless of roads or loads. » » » »

*Let us give you the detailed story of  
FWD Controlled Power. Write today.*

# FWD

**THE FOUR WHEEL DRIVE AUTO CO.**  
CLINTONVILLE, WISCONSIN  
Canadian Factory, KITCHENER, ONTARIO

## TRUCKS

1 1/2 TO 15 TONS

## 5 STEPS TO UNMATCHED TRUCK PERFORMANCE . . .

**1. GREATER SAFETY.** Front axles are set back, resulting in **power**, as well as load being distributed to all four wheels. This gives the FWD sure footing on slippery pavements, in congested traffic, and when going around curves.

**2. GREATER DEPENDABILITY OF SERVICE.** Reserve power, rugged construction throughout, and true application of the four-wheel-drive principle, insure continuous operation under any condition. Backed by a nation-wide organization of parts depots and service men available at a moment's notice.

**3. FASTER SERVICE.** FWDs, with their powerful engines, wide range of gear ratios and four-wheel traction cut down trip time by being able to "make" the hills, curves, and poor going, faster than average trucks. No necessity for over-speeding on the straight stretches.

**4. WIDER RANGE OF OPERATION.** Four-wheel traction enables the FWD to handle its regular hauling job easily and do the tough jobs as a matter of course.

**5. OPERATING ECONOMY.** Definite savings are made in gasoline, tire wear, maintenance cost, and other "out-of-pocket" expenses. This is the result of equal distribution of power, load, and scientific four-wheel-drive construction throughout.

**CONTROLLED POWER ON AND OFF CONCRETE**

(CONTINUED FROM PAGE 86)

The biggest mistake truckers have made, in my opinion, is to become participating carriers in the Consolidated Freight Classification, the railroad publication. The only justification for this might be that they had nowhere else to go. But they did have the National Motor Freight Classification. In fact, they still have it. In joining in on the railroad publication these hundred-odd truckers suggest they are guided by a counsel of despair. There is no occasion for that attitude. I question whether the rail carriers permitted these truckers to participate in their

classification purely out of kindness or sympathy for their plight. More likely they were delighted to have them, since it was playing right into their hands. It is possible these truckers will have to publish almost as many exceptions to that classification as there are rules and ratings in it. After all, this classification was put together with the railroads and not the trucks in mind. The National Truck Classification can be amended and revised so as to prove more beneficial to truckers. You may be sure that the railroads will not revise their classification to that end.

This raises another question. It has

been said that several of the motor carrier tariff agents found themselves so swamped with work that they were obliged to borrow help from the railroad tariff publishing agents. Even considering the emergency, and never for a minute doubting the good faith of the men from the railroad tariff bureaus, the wisdom of such action is highly speculative. This may in part explain the more than accidental parallel between many of the new truck tariffs and the railroad publications. At any rate, it is slightly absurd. Railroad men are steeped in their own business, have unyielding views about tariffs and rates, and are by reason of their personal interests antagonistic to development of highway transportation.

**O**UT of all these comments one certain conviction arises, the soundness of which can hardly be disputed. That is, there should be but one classification for all of the trucking industry. The sooner this is done the better it will be for the shippers and the truckers. There seems no necessity to argue the point. There is a necessity that this be done without delay.

Because so many of the new truck tariffs are valuable and commendable I am anxious that readers should not misunderstand the intent of these remarks. Many of the good things about the tariffs were not mentioned because it seems more important to consider the questionable parts, with a view to their possible correction. For the same reason there has been no attempt to dwell upon the undoubted difficulties that have attended the compiling of these tariffs; difficulties inevitable when thousands of truck operators must of a sudden revise their methods, outlook, operations, and act with a unity heretofore not required of them. Even the fellow on the shipper's side of the problem can appreciate these things. These views may take on a little more importance and significance when it is mentioned that they are not the exclusive outpourings of a single mind. My respect for truckers is such that I deemed it wise to check these views with other traffic men.

Perhaps a few insatiable characters will wonder why there has been no mention made herein of the rates themselves. They may plead that these criticisms are unfair unless they are coupled with a discussion of the rates. However, editors also have a "STOP" signal. As it is now I've probably crossed the line. When the light changes to green the discussion of the rates will come charging, or maybe purring, along. (Ed. Note: The green signal is on and the rate discussion will be published in the July issue.)

COMMERCIAL CAR JOURNAL

**SHEFFIELD**  
for good steel

**STERLING**  
for good silver

**DRY-ZERO**  
INSULATION  
for good insulation

## *You can trust these names. Time has proved that they mean definite standards of quality. . .*

Many times the elements that go to make up quality are hidden deep within the product. It is for this reason that NAMES have become established as marks of quality—names like Sheffield for steel, Sterling for silver. When these particular names appear on a product you feel reassured. They are the tangible marks or identifications of hidden elements that you cannot readily measure or test. You accept these names as sufficient proof of quality.

o o o

QUALITY may be claimed by the maker, but it is attested by others. Since it was introduced in 1921 Dry-Zero Insulation has had its quality endorsed repeatedly by people who know, by engineers, body builders and operators.

That is why Dry-Zero Insulation is accepted as a standard of truck body insulation. Its inherent qualities have been attested by those who are in a position to know what insulation quality must be.

Because Dry-Zero Insulation has been measured and tested many times by independent engineers and laboratories you can be sure of the high degree of the three primary requirements for truck body insulation—Efficiency, Permanence and Lightness.

Engineers and laboratories have placed a rating of .24 B.t.u. on Dry-Zero Insulation, the best rating of any commercial insulant.

This efficiency is permanent. It lasts for the full life of your truck. Dry-Zero Insulation does not settle or rot, is not affected by molds, never absorbs odors, never breaks up or disintegrates.

Neither do you pay for excessive dead-weight. Dry-Zero Insulation weighs only 2 oz. per board foot. This means both a saving in dead-weight and additional payload capacity.

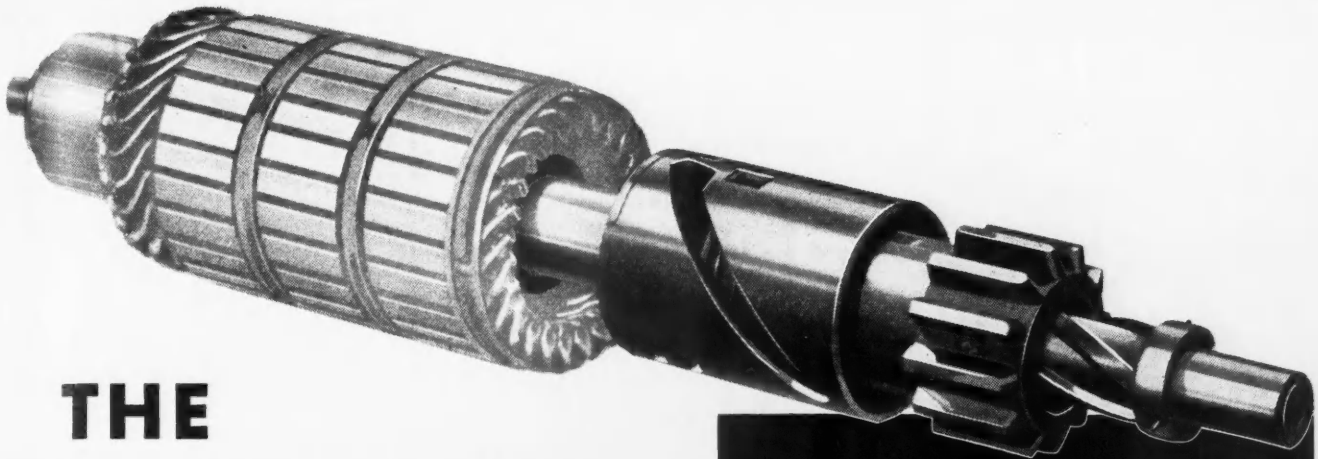
Find out for yourself the possible saving by using Dry-Zero Insulation in your trucks, operated at either refrigerated or normal temperatures. Ask your body builder. Or write to us for a complete report, giving the size of your truck body, the merchandise to be carried and the required temperature.

DRY-ZERO CORPORATION

222 North Bank Drive, Chicago  
687 Broadview Avenue, Toronto

**DRY-ZERO**  
INSULATION  
*The Most Efficient  
Commercial Insulant Known*





# THE DELCO-REMY DYER DRIVE

## *A Solid-Action Starting Drive for Diesel and Heavy-Duty Gas Engines*

The DELCO-REMY DYER DRIVE is a heavy-duty mechanical drive designed to transmit the greater horsepower required for cranking Diesel and the larger gas engines. Used with either a pedal or solenoid shift, it definitely engages the pinion with the flywheel ring gear before power is applied and *before any rotation of the starting motor shaft occurs*. It provides a "solid" drive through the splines of the armature shaft; automatically disengages the pinion when the engine fires, and does not chip the flywheel teeth. A positive lock prevents the pinion from "drifting" into the flywheel.

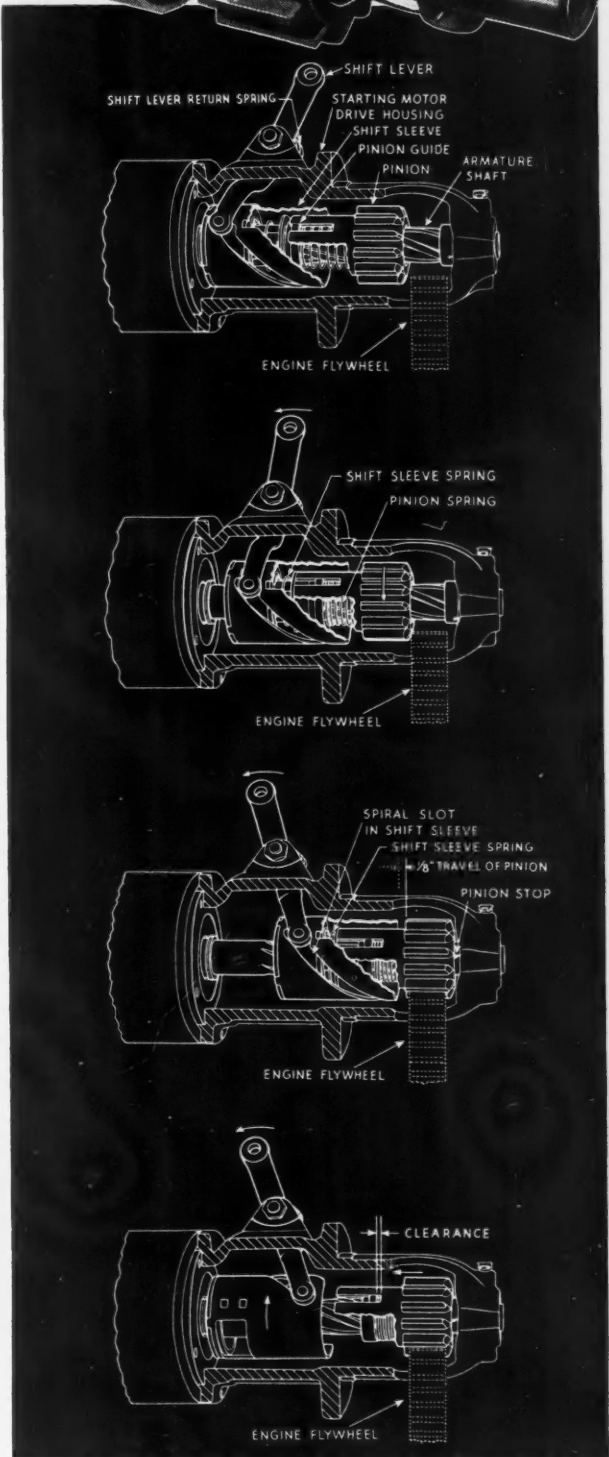
Because of its dependable performance in service, the Dyer Drive is rapidly increasing in favor with operators of larger commercial vehicles everywhere.

DELCO-REMY CORPORATION, ANDERSON, INDIANA

# Delco-Remy



Service and parts for all Delco-Remy units are available in the United States and Canada through Branches and Distributors of United Motors Service . . . in other countries through Overseas Motor Service Corporation.



Illustrations show operation of Delco-Remy Dyer Drive—from Delco-Remy Service Bulletin 1M-155. Write for free copy.

## BURCH DUMP BODY HOIST

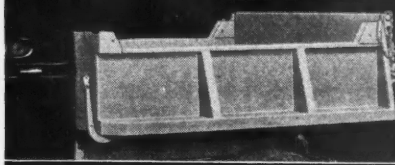


ONLY  
ONE  
MOVING  
PART

Balanced power for raising or lowering—automatic locking, any position—one moving part—no gears—no oil lines—no heating or foaming of oil. Plain and Braced Side Bodies—1½ and 2 Yard capacities.

FAST! POWERFUL!

Write for Literature



**THE BURCH CORP.**  
Dept. F - CRESTLINE, OHIO

## Motor Tune-Up

is a real profit  
and business  
building ser-  
vice.



Send for free  
Tune-Up Charts

**CARTER CARBURETOR  
CORP.** 2834-56 N. Spring Ave.  
St. Louis

## "Our trucks never looked so clean!"



That's what one truck owner said after using **MAGNUS 55-P.** For trucks washed this way take a better polish and delicate striping or finishes are not affected. Write for 48-page "AUTOMOTIVE CLEANING HANDBOOK" which gives the whole story.

Magnus Chemical Co., Inc.  
38 South Ave.  
Garwood, N. J.

## New Products on Parade

(CONTINUED FROM PAGE 44)

### Portable Welder

A PORTABLE arc welder known as the King type W-1, is the latest product of the Electric Heat Control Co., Cleveland, Ohio. Several new features are claimed, among



them being an indicating selecting switch. The operator can select the desired welding current by merely throwing the switch to the "off" position and turning a rheostat. There are no exposed terminals or plugs and no danger of shock when changing welding rates.

### Synchro-Start

SYNCHRO-START automatically functions as a starting unit when the engine drops below its lowest pulling speed. When this occurs, the control instantly closes the starting switch and synchronizes the engagement of the starter pinion while the flywheel is still in motion. The instantane-



ous live flywheel pick-up which this device provides is said to prevent back-roll and back-fire as well as stalling. As long as the switch is in the "on" position the flywheel will never stop turning forward. Synchro-Start Corp., 213 Cherry St., Toledo, Ohio.



Write Today for Full Information About

## SPONGEX GRID CONSTRUCTION Seat Cushions or Fillers

All Sponge Rubber Construction  
Cheaper Than Springs • The Most  
Comfortable Cushion Ever Made

Address Dept. C

**SPONGE RUBBER  
PRODUCTS CO.**  
DERBY CONN.

## DEPENDABLE!

If you want air-brake dependability, write to the Hays Corporation, Michigan City, Indiana, for literature describing this new husky wiper that slashes through clogged mud or snow with the 100-lb. kick of the air-brake supply behind it.



## AIR-PUSH

## THE WORLD'S FINEST ALL-WHEEL-DRIVE TRUCKS\*

ARE BUILT BY

**MARMON-HERRINGTON**

Factory and General Offices: Indianapolis, Indiana

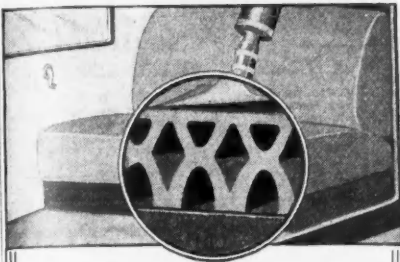
\*The new line of Marmon-Herrington All-Wheel-Drive Ford V-8 models and the recently expanded line of regular Marmon-Herrington four and six wheel-drive units.

*Fleets keep moving*

—when re-ringed with **MOLIUM**  
The new economical, positive oil control method.  
Write for details  
Simplex Products Corporation  
3816 Kelley Ave., Cleveland, O.

**SIMPLEX**  
MOLIUM PISTON RINGS

## CONSIDER THE VALUE OF Black Diamond SEAT CUSHIONS



When you are ready to equip your trucks with seat cushions and back rests consider the proven performance value of **BLACK DIAMOND All-Rubber** cushions. Performance is proved, not in laboratory tests alone, not in road tests alone, but in actual service in thousands of trucks. The famous exclusive diamond grid construction guarantees even better than above average results. As new car and replacement equipment, these cushions offer not only a new comfort and safety for drivers but eliminate upkeep expense. Designed to fit any size or shaped cab. Write direct for complete details.

**KARPEX MANUFACTURING CO.**  
1424 E. 19th St., Indianapolis, Ind.

## OSHKOSH

### 4 Wheel Drive Trucks

A proven product. 1½ to 10 ton capacity. Write for complete information.

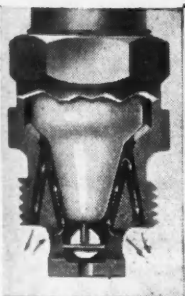
## OSHKOSH

**Motor Trucks, Inc.**  
Oshkosh, Wis.



Use genuine Timken Bearings for replacements. Look for the name "TIMKEN" stamped on every cup and cone.

THE TIMKEN ROLLER BEARING  
SERVICE & SALES CO., CANTON, O.



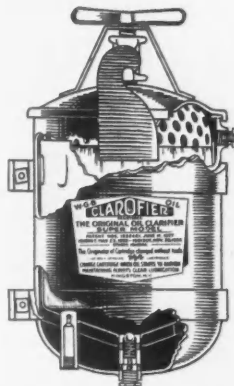
### NEW SPARK PLUG BREATHE

Note the Ventilated feature. Each stroke of the piston drives clean, cool gases up around the porcelain and points and the plug stays cool and clean. Road tests show smoother, more efficient engine performance and much longer life. Write for details.

"ECCO" STANDARD SPARK PLUG CO.  
4505 Wayne Ave., Philadelphia, Pa.

## W. G. B. Oil Clarifier

THE new "Super" model W. G. B. Oil Clarifier has 2½ times the capacity of the popular W. G. B. standard model. Cartridge life has also been lengthened in this new model. This unit is designed for use on engines having over 300 cu. in. engine displacement. According to W. G. B. Oil Clarifier, Inc., Kingston, N. Y., this model



does not allow oil to become contaminated, it efficiently removes abrasives, carbon and discoloration. With the use of this unit, the cartridge should be changed only when the oil begins to darken. The drain plug at the bottom of the clarifier should be opened occasionally to drain water and sludge which has been separated from the oil. The cartridge is changed without the use of tools. Total capacity of the clarifier is 239 cu. in.

## Finish for Refrigeration Units

BRINE, constant moisture from frozen condensation, repeated cycles of defrosting and cooling cause rust and corrosion of refrigerating units. A system that withstands these conditions is a new two-coat, air-dry synthetic finishing schedule that has been developed by the Roxalin Flexible Lacquer Co., Elizabeth, N. J., from whom further data may be obtained.

## Las-Stik Wood Putty

LAS-STIK wood putty repairs anything made of wood. It is useful in the repair shop for molds, patterns, inlays, etc. It may be used on trucks for repairing holes in floors, sides, roofs, door locks and hinges. Las-Stik won't shrink, sticks like glue and can be easily cut and drilled. Las-Stik Mfg. Co., Hamilton, Ohio.

## DEARBORN LINE

### CAB-OVER-ENGINE FOR FORD TRUCKS

### MORE ROOM FOR PAYLOAD

Dearborn Line Cab-Over-Engine Conversions give you a whale of a lot of room for payload and more profits! Moving the cab over the engine increases the payload space of your Ford Truck by 30% to 50%. You have the payload space of a large van and retain the fuel economy and maneuverability of a small truck! See your nearest Ford Dealer or write us direct.

TRANSPORTATION ENGINEERS, Inc.  
P. O. BOX 116 HIGHLAND PARK  
DETROIT, MICHIGAN

## NOW It will pay You to Reclaim Oil—The New

## Hilco Oil Reclaimer

with an entirely different process is the result of our ten years' experience in oil refining for fleets.



Model C—Capacity 12 gals. per day

### ITS FEATURES...

#### proven in the field:

1. Complete restoration of your oil, removing acid and all foreign material and dilution.
2. Low first cost—low operating cost.
3. A machine that is simplicity itself, continuous, all electric and automatic.
4. Low operating temperature — high recovery.
5. Capacities from 12 to 50 gallons per day.

### The Hilliard Corporation

102 Fourth Street, Elmira, N. Y.



### SEND THIS COUPON

—for information on how the New Hilco pays by producing these results at a low first cost. Ask about our "PAY AS YOU SAVE" PLAN.

THE HILLIARD CORPORATION  
102 Fourth Street, Elmira, N. Y.

Please send further information about the New Hilco.

Name .....

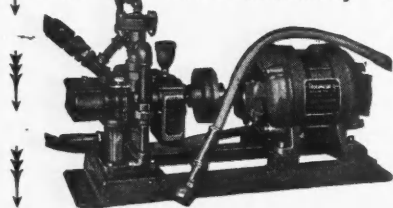
Company .....

Address .....



## CLEAN TRUCKS,

Busses and Cabs Quicker,  
and More Economically—with



## SPEEDWASHING

Big and little truck, bus and cab owners are switching to the years ahead Rotawasher—for quicker washing at a substantial saving in labor costs. And the finished job is CLEAN! The list of Rotawasher users will convince you.

Write at once full details. Address THE

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CORPORATION, DEPT. CC

118 E. St. Clair Ave., CLEVELAND, OHIO

## QUICK CRACK REPAIRS WONDERWELD

Repairs Blocks In 1/2 Hour

No more tearing down and loss of income for days. Pour Wonderweld in top hose connections of hot engine. Cracks fill with Wonderweld, making block tight as new. Not a radiator repair. One can enough for most jobs. Cut repair cost and lay-up time. Ask your jobber.

MILLER MANUFACTURING COMPANY  
1218 Kaighn Avenue, Camden, N. J.

## FOR FORD Trucks CHEVROLET Trucks International Trucks POWER BRAKES WITH REACTIONARY CONTROL

**\$18<sup>00</sup>**  
and  
up

Heretofore Power Brakes with Reactionary Control were obtainable only at much higher prices. Now you can get them at this very low price. Write at once for full information and trade discounts.

Power Brakes for Pass. Cars, \$12.50

**BERG BROS. MFG. CO.**  
4520-22 W. North Ave., CHICAGO

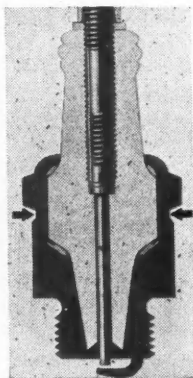
## Do-Ray Foglite

DO-RAY LAMP CO., Chicago, announces its new Amb-O-White fog light. The ambo-white lens is so designed that the light rays cover the roadway but are not thrown upward. The lens is a white glass subjected to a special process transmitting an amber light. The Perma-Seal door is of stainless steel. The reflector is designed for a fixed focus 32 c.p. bulb. The lamp is dust and water proof. The bracket is spot welded and riveted to the lamp body. Nine feet of weather-proof cord is furnished with the lamp. Black body lists at \$4 and the full chrome is \$5.



## AC Plugs Sealed Hot

IMPORTANT changes in the method of manufacture are said to be responsible for the leak-proof construction of the new AC spark plugs. The center electrode where gas might leak was solved by the adoption of the two-piece center wire, and now through the development of new automatic machinery, all other sources of leakage have been stopped. The steel shell is heated to a red glow permitting the shell and insulator to adjust themselves to each other while the metal is soft. The solid copper gaskets, shown in the sectional view, mould themselves around the insulator and when the heat is shut off shrinkage of the plug body makes the seal permanent. AC spark plugs are made in Flint, Mich.



## DeVilbiss

Spray-Painting Equipment—Spray Booths—Canopy Exhaust Systems—Exhaust Fans—Air Compressors—Hose and Hose Connections—Oil Guns.

Write for catalog

**THE DEVILBISS COMPANY**  
TOLEDO, OHIO

Distributors or direct sales and service representatives available everywhere.



A New  
Safety Device  
for TRUCKS  
and TRAILERS

## The Robinson AUTOMATIC BRAKE LOCK

Holds break-a-ways . . . provides Sure and Safe parking . . . meets all legal requirements . . . easy to install . . . automatic and unfailing. Write for illustrated details and prices.

**AMERICAN DIE & TOOL CO.**  
READING, PENNA.

## HERCULES POWER

Hercules engines, both gasoline and Diesel, have long been standard equipment on many leading makes of trucks, truck tractors and delivery units as well as urban and interurban buses, road building and maintenance equipment, industrial, oil field and agricultural machinery. Hercules provides an engineering service which includes a study of specialized power applications.

**HERCULES MOTORS CORPORATION**  
Canton, Ohio, U.S.A.  
America's Foremost Engine Manufacturer  
Power Plants from 4 to 200 HP.

# 94 - 97%

of your crankcase drainings may  
be recovered for use, at a cost of  
3-6 cents per gallon.

When sending for complete  
information, let us know  
what your new oil purchases  
amount to each month; gal.  
....., per gal. ....

2221 Dalzelle  
**SKINNER PURIFIERS, INC., Detroit**

Good Ventilation  
for truck cabs

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**FLEXIBLE VENTILATORS**  
The Nichols-Lintern Co.  
7960 Lorain Ave. Cleveland, Ohio

**THE COMPLETE LINE  
THAT COMPLETELY SATISFIES**



THE FITZGERALD MFG. CO., TORRINGTON, CONN.

## FITZGERALD GASKETS



—the trucks that are  
"BUILT TO MEET  
A CONDITION"

THE **HUG** COMPANY  
Highland • Illinois

**McCORD REFRIGERATION**  
—FUEL SYSTEM  
FOR TRUCKS  
**REFRIGERATION**  
AT NO COST  
—BY THE FUEL  
THAT RUNS THE MOTOR

McCORD RADIATOR AND MFG. CO.  
DETROIT

# ALCO

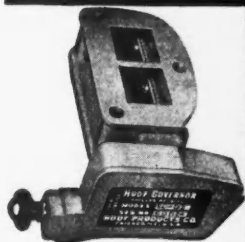
## FOUR WHEEL DRIVE

Converts your Ford or Chevrolet truck into a **RUGGED, POWERFUL FOUR WHEEL DRIVE** able to do the job with ease where much heavier trucks fail, and at a fraction of the cost.

Write

**ALMA MANUFACTURING CO.**  
ALMA, MICHIGAN

## HOOF GOVERNORS



*Used  
Exclusively  
on Hundreds  
of National  
Fleets*

**HOOF  
PRODUCTS CO.**  
162 N. FRANKLIN ST.  
CHICAGO, ILL.

Ahlberg *Ground Bearings*

**40%**  
Saving Over New Bearing  
Costs

**AHLBERG BEARING CO.**  
Chicago

*Branches and Distributors  
Everywhere*

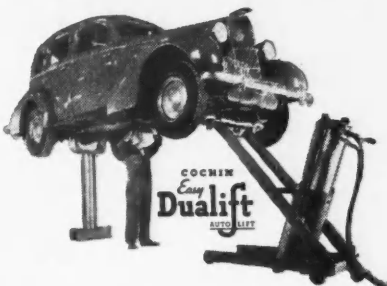
Ahlberg *Ground Bearings*

## Grounding Plug

APPLETON Auto Tank Truck Grounding Plug and Receptacle is a safety device required in certain states at all gasoline stations and bulk stations in connection with trucks used in transporting hazardous liquids. Appleton Electric Co., 1701 Wellington Avenue, Chicago.

## Dualift Auto-Hoist

DUALIFT auto-hoist is actually two lifts in one, one section being permanently mounted in the floor, and the other section being portable. An interlocking control operates the units together or separately as needed, and a safety mechanism regu-



lates both the air and oil flow to make lifting and lowering steadier. A feature claimed for the Dualift is that there are no cross-beams to interfere with the mechanic when he is working under a car or truck. A vertical lift of 66 in. is possible with this equipment. Cochran Mfg. Co., 116 New Montgomery St., San Francisco.

## If In Quest of Safety Try a Quiz

(CONTINUED FROM PAGE 15)

were found to be thought more prevalent than has been previously recognized.

The questionnaire was written around our accident experience, was timed to determine if prior dissemination of accident facts had hit the mark and how well we were selling our ideas of how accidents might be avoided. I believe considerable thought along correct lines was stimulated. Some research among safe driving manuals and other such sources of information, was detected.

(TURN TO NEXT PAGE, PLEASE)



**PER-MAX**  
*the Permanent*  
**TRUCK FINISH**

Ask for list of prominent fleets successfully using Per-Max. We will send one pint

of black for test if you will write us giving the size of your fleet.

**RINSHED-MASON COMPANY**  
Manufacturers of Automotive Finishes  
5935-71 Milford Street, Detroit, Michigan

# SAVES OIL!

## SAVES ENGINE WEAR!



## THE NEW "SUPER"

MODEL W. G. B. OIL  
CLARIFIER . . .

TWO AND ONE-HALF  
TIMES CAPACITY OF  
STANDARD MODEL

Designed for large motor equipment, particularly Diesel motors and all motors having over 400 cubic inch displacement.

Write for information to  
101 GREENKILL AVE., KINGSTON, N.Y.

## W. G. B. OIL CLARIFIER, INC

## THORNTON

Dual Ratio Four Rear Wheel

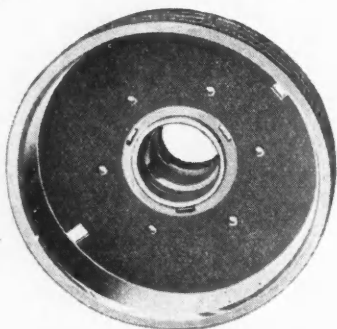
## DRIVE FOR TRUCKS!

Is setting new records

**THORNTON TANDEM CO.**  
Detroit

**"Over 200,000 miles and  
no cracks or uneven wear"**

Leaman Transportation Company, Downingtown, Pa., writes: "We have equipped about 20 trailers, 8 semi-trailers and a few tractors with your drums, working in mountain as well as level territory. We have had no replacements after we equipped with your drums. Some have had over 200,000 miles of operation and show no signs of cracks or uneven wear. \*\*\* reduced our brake costs very materially."



### End Your Brake Drum Trouble

Made of Cemcalloy, the special heat and wear resisting alloy metal, our brake drums are non-checking, and non-warping. Thoroughly tested on hundreds of trucks during the past 2½ years without one failure due to breakage, heat checking and undue or uneven wear.

Write for information and prices, stating make, model, quantity and type of service.

CHRISTIANA MACHINE CO., Christiana, Pa.

**CEMCALLOY**  
Heavy Duty BRAKE DRUMS

**"Supervised Transportation"**



**1st**

and the last word in governors

Write for complete information — there is a MONARCH distributor in your area.

MONARCH GOVERNOR CO., DETROIT

Based on the experience of our drivers, we installed right-hand mirrors and we have reduced this type of accident experience 90 per cent. The public knows little of the use of mechanical turn indicators, right hand turns are difficult to signal and about the only means you have of doing so in tractor-trailer use is in assuming your position for the turn as early as possible. Such units need more than an average amount of space for a right hand turn and the mirror permits the driver to watch to the rear on his right side.

However, we can install every safety device on the market—but still the most important factor in highway safety is the driver.

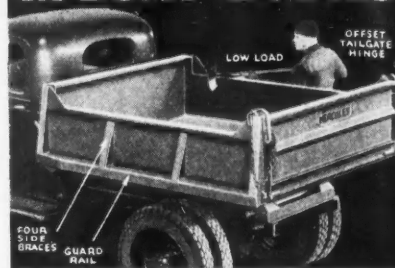
**T**HERE is a shortage of good drivers. To realize how appalling that shortage is just look around you, on open highway or in city traffic.

General accident statistics tend to show that poor driving is entirely too prevalent in all classes of drivers. I think too, that our type of business has created a demand for drivers quite in excess of the supply of trained men. Also, adequate supervision of truck drivers, on the whole, is sufficiently laggard to have permitted a number of men to consider themselves as drivers, in error. Again, long distance driving, I'm referring to trucks, does not seem to attract the level headed, emotionally stable individual who in my opinion makes the best driver. Of course we get some of these people, but not in sufficient numbers.

Good drivers are alert, well coordinated mentally and physically, have a well developed sense of responsibility to their self respect, their employer and the rights of all other people, they diagnose accident hazards before they reach them and they must know the limitations of their ability and the ability of their vehicle.

We interview all applicants for driving jobs with a view toward estimating their intelligence, studying their appearance, and getting an outline of

## HERCULES OFFERS MORE IN DUMP BODIES



No matter what your customer requirements are you can fill them better and easier with Hercules Steel Dump Bodies and Tubeless Hydraulic Hoists.

Hercules offers a full line of bodies—all types and all sizes and several models of powerful tubeless Hydraulic Hoists.

Any user will tell you that "Hercules Dumps are better."

Distributors Everywhere

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**HERCULES STEEL PRODUCTS CO.**

GALION, OHIO, U. S. A.

ALSO HERCULES SPLIT DRIVE POWER TAKE-OFFS

**DOUBLE  
SAFETY**

**POSITIVE  
TRACTION**

**DOUBLE  
MILEAGE**

## McKay Multi-Grip Double-Bar-Reinforced Truck Chains

**THE MCKAY COMPANY**  
MCKAY BLDG. PITTSBURGH, PA.

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VALVES • GUIDES • SPRINGS • KEYS  
SEAT INSERTS • WATER PUMP PARTS  
CHASSIS BOLTS AND BUSHINGS

TRYON SHACKLES

SILENT "U" SHACKLES

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ECCENTRIC TIE RODS • PISTONS

CHROME-PLATED PISTON PINS

Write for Catalogs

The Toledo Steel Products Co.

3304 SUMMIT STREET

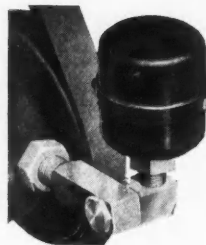
TOLEDO, OHIO, U. S. A.

**10,000 MILES OF CONTINUOUS, POSITIVE HIGH PRESSURE LUBRICATION ON ONE FILLING**

**ALCO.**

for

- Water Pumps
- Fan Bearings
- Clutch Yokes
- Pedal Bearings
- Steering Spindles
- Shackle Bolts
- Wheel Suspension
- Saddle Bearings
- Tie Rods
- Etc.



- QUICKLY REFILLED
- INSTALLED IN 5 MINUTES

### ATTENTION SALESMEN

To men having a following of fleet owners, we offer an opportunity of a lifetime. With our introductory offer you can close five to eight accounts daily. You do not get a turndown. Alcos are used and endorsed by the largest fleets in the country. Write today and tell us about yourself. This may be the opportunity you are seeking.

**AUTOMATIC LUBRICATOR CO.**  
53 W. Jackson Blvd., Chicago, Ill.



# St. Paul

## HYDRAULIC HOISTS & BODIES

There's a St. Paul Hoist to fit every need. Distributors conveniently located in leading distributing centers . . . stocked and ready to make prompt shipments.

St. Paul Hydraulic Hoist Co.  
2207 University Ave., Minneapolis, Minn.

## Commercial Car Journal Truck Specifications Are Corrected Monthly

You can depend on the information they contain as being accurate and up to the minute. Use them to buy and use them to sell trucks.

## Motor Reconditioning Should Start with Ring Ridge Removal



MADE IN  
TWO RANGES: Model 210, \$12.50  
2 1/8" to 4" at  
Model 210-A, \$16.50  
4" to 5" at . . .

Every new piston, oversize ring or connecting rod job demands ring ridge removal. This low-cost tool is the quickest and easiest way to remove ring ridges. Follows contour of cylinder exactly and stops cutting when ridge is removed flush with cylinder wall. Pays for itself in the time it saves. Order from your Jobber now.

**HALF RING RIDGE REAMER**

## WEAVER

### Hydraulic PRESSES

for  
**Speed, Ease and  
Efficiency**

In 60 and 30 Ton Sizes

Ask for Details

WEAVER MANUFACTURING COMPANY  
Springfield, Illinois

THUMB-SCREW  
ADJUSTMENT  
BALANCED  
(3-SIDE) PULL

OVER  
LAPPING  
SEAL

ONE  
SIZE FOR  
MANY

ADJUSTABLE  
FOR SIZE

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## NOC-OUT

HOSE  
CLAMPS

THE HOSE CLAMP WITH  
THE THUMB SCREW

Standard equipment of the  
automotive industry. Ad-  
justable - one size equals  
many. Quick tightening,  
perfect seal. At all Job-  
bers.  
Pat. No. 1,382,813.

**WITTEK MFG. CO.**  
4305 W. 24th Pl., Chicago, U.S.A.

their previous experience. If, in this interview, we are satisfied that the applicant has met our preliminary requirements, then, and not until then, we request formal application for employment on a regular bonding company form.

WHEN we are satisfied as to the man's past history and his physical and personal make-up, we require a demonstration of his driving ability. This demonstration period represents a sort of apprenticeship during which the new man is accompanied by a seasoned driver whose ability to properly handle our tractor-trailer units has been proved through long experience. The driver, who has the job of breaking in all new men and who also investigates the driving habits of older men having too great accident frequency, passes upon the new man's driving ability and the promise he shows before permitting him to take a truck out alone.

We avoid fatigue, a big accident contributing factor, by limiting our drivers to 200 miles daily. There are, of course, exceptions to that rule but very few. Drivers were formerly responsible for the regulation of their hours and on the average were found not competent to do so. Fatigue, while usually difficult to detect in causations in a large number of accidents, was without doubt present and due in a great measure to the drivers' habits, overwork being caused by lack of planning, largely. Limiting of daily miles provides ample rest periods with regularity. Men are given definite runs and are through for the day when the run is completed, a minimum number of hours of rest are required before returning to the truck.

At three-month intervals we hold general safety meetings at which qualified speakers discuss safety in the drivers' own language. A portion of each meeting is usually given over to the men for suggestions and discussions. Here, also, innovations in methods are proposed and discussed, and past records are quoted to show where improvement is needed. Decatur Cartage Co. has profited by these meetings and so have our drivers.

WHEN one of our drivers is involved in an accident, no matter how trivial its nature, he fills out the accident card. Next, he reports at our nearest office where the Preliminary Vehicle Accident Report is made. A copy of this report is sent to the insurance company as notification of an accident and as a forerunner of the regular Vehicular Accident Report. The driver reports in person to the safety director with his card and the preliminary report. At that time it is determined if the case

## The new Schrader Chuck Gauge (No. 2030)

offers complete

## "TRIGGER CONTROL"

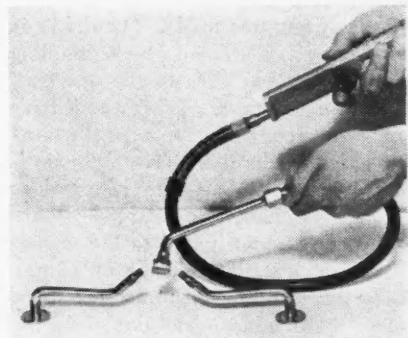
of Tire Inflation, Pres-  
sure Recording and  
Deflation . . .



. . . and  
the new  
Schrader

## DUAL-FOOT EXTENSION CHUCK

(No. 8340) makes it easy to reach  
dual-tire or other hard-to-get-at valves



EQUIPMENT that makes air-servicing of tires easier and speedier will earn its cost many times a year for the truck or bus fleet operator. With the new Schrader air-line appliance shown above tire inflation is simpler, faster, and more accurate than ever before. They save time; save tires — minimize the chance of neglect. Order through your distributor.

A. SCHRADER'S SON, BROOKLYN, N. Y.  
Division of  
SCOVILL MANUFACTURING COMPANY  
Incorporated

# Schrader

REG. U.S. PAT. OFF.

TIRE-SAVING VALVES, CAPS and GAUGES

# *Sterling* **DIESEL** MOTOR TRUCKS

### Proof of Performance

**There is no better proof of Sterling performance than re-orders from owners. Users endorse every claim made for Sterlings.**

**Long Life  
Economical  
Dependable  
Powerful**

Engineered and built for your specific requirements.

**Write today.**

**STERLING MOTORS CORPORATION**  
MILWAUKEE, WISCONSIN

needs immediate action of a disciplinary nature, if not, the driver appears at the next regular monthly meeting of the trial board to get his rating on the case in question. The board reviews the driver's original report and the results of the insurance carriers investigation, if any was made. The driver is thoroughly questioned to determine what his actions were in the accident. If it is found that the driver could have prevented the accident, regardless of the action of the other driver, the accident is chargeable. The board does not assess penalties, it establishes only if our driver contributed to the causes of the accident. It is made up of our safety director, the insurance company broker and engineer, and one accident-free driver.

**I**F the trial board finds our driver did not contribute to the cause of the accident it cannot be charged to him. If any action on his part was in violation of good driving practice he is charged with the accident. Penalties for chargeable accidents are assessed according to frequency, amount of carelessness evident, previous record, etc. Layoffs are occasionally employed, but as a last resort, since they are a distinct hardship to the man. Chronic repeaters are eventually let out. We try to build up a desire to drive safely since we feel that is the only lasting remedy.

At regular intervals we make up an accident summary report which gives us a clear picture of all minor and major accidents incurred in the period, and which includes all information

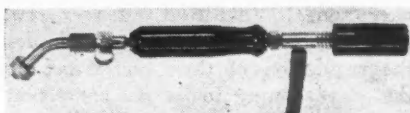
relative to age groups, experience, actions of drivers, locations, the type of accident, results, time, road, weather, and light conditions, and many other items which enable us to seek out causes which are reflected in greater accident frequency and which obviously must be improved.

## Yankee Lighting Equipment

**A COMPLETE** line of directional signals, reflectors and clearance lights is announced by the **Yankee Metal Products Corp.**, Norwalk, Conn. The front of the directional signal is a metal face with an arrow silhouetted in it and an amber pyralin backing. The maker claims it is visible at a distance of 200 ft. in bright sunlight. Yankee reflectors are visible up to 1000 ft. The silver-plated glass lens is set in special cushioning asphaltum making it shatter-proof and sealing against dust.

## Halide Leak Detector

**THE** Halide leak detector for refrigerant gases consists of a regular Prest-O-Lite needle valve torch handle assembly, a burner which includes a suction nipple for



attaching a rubber hose, and a chimney with a copper reaction plate. The rapid flow of acetylene through the burner causes a suction which draws in any refrigerant gas near the open end of the suction tube.

To operate the detector, the flame is first adjusted so that the top of the outside cone is level with or slightly above the

Decatur drivers' employment and accident records are kept on the reverse sides of one form. This is the 8½ x 11-in. form shown here. The accident summary and accident reporting forms are described in the article by Fleetman

[illegible]

# ARMORPLY

● A metal faced plywood panel of high quality for building better panel bodies.

**Armormply is the lightest panel of its type available. It is faced with rust resisting galvaneal steel, and has a hard birch back.**

**Write for samples, prices  
and full information.**



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UNITED STATES PLYWOOD CO.  
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chimney of the detector. The open end of the suction tube is used to explore around those places where a leak might occur. Any halide refrigerant gas drawn into the burner is decomposed with the formation of free acids. These acids, coming into contact with the hot copper reaction plate cause instant color response in the flame. Visible color indication of the smallest concentration of refrigerant gas by a green-tinted flame is given by the Detector.